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PROCEEDINGS

OF THE

American Forestry Association

AT THE

Thirteenth and Fourteenth Annual Meetings,
December, 1894, and January 1896,
at Washington,

AND AT THE SUMMER MEETINGS AT

Brooklyn, N. Y., and Springfield, Mass.

VOLUME XI.

WASHINGTON, D. C.
1896.

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NOTICE.

The proceedings of the American Forestry Association have hitherto been published irregularly, the volumes not being numbered. With the improved financial condition of the association, and its increased membership, a regular issue of the annual proceedings in future appears warranted, and it seems desirable to designate, by numbers, not only the coming volumes but also those previously issued. The present volume is, therefore, numbered XI. The series of previous volumes includes the following publications. Of these, those marked * are out print:

* Vol. I.—Proceedings of the special meeting at Montreal, August, 1882. Papers read before the meeting printed separately by the Canadian Government in the Ontario Fruit Growers' Report. (The proceedings of the first annual meeting, that held at Cincinnati, April 25–29, 1882, were not published in pamphlet form.)

* Vol. II.—Proceedings of the second annual meeting, at St. Paul, August, 1883. Also, Forestry Bulletins No. 1 (May, 1884); No. 2 (September, 1884); No. 3 (January, 1885).

* Vol. III.—Proceedings of the special meeting at Washington, D. C., May, 1884, and third annual meeting, at Saratoga, New York, September, 1884.

* Vol. IV.—Proceedings of the fourth annual meeting, held at Boston, September, 1885.

* Vol. V.—Proceedings of the fifth annual meeting, held at Denver, Colorado, September, 1886. (Newspaper report.)

* Vol. VI.—Proceedings of the sixth annual meeting, held in Springfield, Illinois, September, 1887.

Vol. VII.—Proceedings of the seventh annual meeting, held at Atlanta, Ga., December, 1888, and of the eighth annual meeting, held at Philadelphia, Pa., October, 1889.

Vol. VIII.—Proceedings of the summer meeting, held in Quebec, September, 1890, and of the ninth annual meeting, held in Washington, D. C., December, 1890.

Vol. IX.—Papers read at joint session of the American Economic Association and the American Forestry Association, held at Washington, D. C., December, 1890.

Vol. X.—Proceedings at the tenth, eleventh, and twelfth annual meetings, held in 1891, 1892, and 1893, and of the special meeting at the World's Fair Congress in Chicago in 1893.

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Dawes, Lewis C.....Englewood, N. J.
French, Dr. J. Clement.....328 Belleville Ave., Newark, N. J.
Gifford, John C.....Mays Landing, N. J.
Girtanner, Jules.....Linden, N. J.
Howell, George W.....Morristown, N. J.
Owens, James.....Montclair, N. J.
Pearson, Wm. E.....Vanderbeck Sons, Jersey City, N. J.
Peters, Dr. John E.....North Cramer Hill, N. J.
Platt, Isaac Hull.....Lakewood, N. J.
Scott, Frank H.....Orange, N. J.
Smock, Prof. John C.....State Geologist, Trenton, N. J.
Stiles, W. A.....Deckertown, N. J.
Tucker, Herbert W.....54 Sayre St., Elizabeth, N. J.
Ward, L. B.....Taylor's Hotel, Jersey City, N. J.
Watson, J. Madison.....Elizabeth, N. J.
Wright, Elias.....Atlantic City, N. J.

NEW MEXICO.

Hobart, Edw. F.....Santa Fé, N. Mex.

NEW YORK.

Albright, John Joseph.....Buffalo, N. Y.
Alexander, Robert C.....203 Broadway, New York, N. Y.
Armstrong, Seymour C.....Riparius, Warren Co., N. Y.
Barber, Amzi Lorenzo.....66 Broadway, New York, N. Y.

NEW YORK—*Continued.*

Bellows, Russell N.....247 5th Ave., New York, N. Y.
Bennett, Dr. J. A ..... 4 Irving Place, New York, N. Y.
*Bishop, Heber R.....993 5th Ave., New York, N. Y.
Boorum, Wm. B.....448 Clinton Ave., Brooklyn, N. Y.
Bowden, Hugh A..... ....Glens Falls, N. Y.
Bronson, Frederick ....76 Wall St., New York, N. Y.
Brown, Geo. H.....48 West 59th St., New York, N. Y.
Brundage, Alfred H..... .....1153 Gates Ave., Brooklyn, N. Y.
Bryce, Miss Edith.....40 West 54th St., New York, N. Y.
Burden, Henry, 2d..... .....Cazenovia, N. Y.
Burke, Dr. Martin.....147 Lexington Ave., New York, N. Y.
Butler, Miss Rosalie..... .....31 East 69th St., New York, N. Y.
Chichester, Charles F..... ...33 East 17th St., New York, N. Y.
Child, Addison .....Childwold, N. Y.
Choate, Miss Josephine.....50 West 47th St., New York, N. Y.
Claflin, John ....Pres. H. B. Claflin Co., New York, N. Y.
Cogswell, Wm. B.....Syracuse, N. Y.
Colvin, Verplank.....Albany, N. Y.
Cook, Martin R.....146 Franklin St., New York, N. Y.
Coxe, Macgrane..... .....Southfields, N. Y.
Craig, Moses.....122 Lyell Ave., Rochester, N. Y.
Crary, J. D.....18 Broadway, New York, N. Y.
Cutting, W. Bayard..... .....Room 516, 32 Nassau St., New York, N. Y.
Dana, Charles A..... .....25 East 60th St., New York, N. Y.
deCamp, Wm. S.....35 Mt. Morris Ave., New York, N. Y.
Dieterich, C. F .....45 Broadway, New York, N. Y.
Dodge, Geo. E .....45 Broadway, New York, N. Y.
*Dolge, Alfred.. ....Dolgeville, N. Y.
Dowd, Olney B.....226 West 75th St., New York, N. Y.
*Dudley, P. H..... .....80 Pine St., New York, N. Y.
Egan, John..... 439 West 14th St., New York, N. Y.
Egerton, Wm. S.....Albany, N. Y.
Erving, Wm. Van Renselaer.....1144 Broadway, Albany, N. Y.
Faile, Thomas H.....45 South St., New York, N. Y.
Fairchild, Hon. Charles S.....76 Clinton Place, New York, N. Y.
Ferguson, Wm. E.....127 Produce Exchange, New York, N. Y.
*Flower, Roswell P.....52 Broadway, New York, N. Y.
Foot, James D.....269 Lexington Ave., New York, N. Y.
Fox, Wm. F.... .....Forest Commission, Albany, N. Y.
Gerhard, Wm. Paul ....36 Union Square, New York, N. Y.
Greiffenberg, Frederick.....Cor. 3d Ave. and 141st St., New York, N. Y.
Hamilton, Arthur S.....Rochester, N. Y.
Harris, Frederick .....Albany, N. Y.
Hayes, Richard Somers.....32 Nassau St., New York, N. Y.
Herrman, Mrs. Esther.....59 West 56th St., New York, N. Y.
*Hicks, John S.. .....Roslyn, Queens Co., N. Y.

NEW YORK—*Continued.*

Higley, Hon. Warren.....32 Nassau St., New York, N. Y.
Higley, Mrs. Warren.....68 W. 40th St., New York, N. Y.
Hildenbrand, Wilhelm ..... 1 Broadway, New York, N. Y.
Hoe, Mrs. Richard M.....11 East 71st St., New York, N. Y.
Hofferberth, Charles F .....132 18th St., New York, N. Y.
Hough, Romeyn B.....Lowville, N. Y.
Hubbard, Robert J.....Cazenovia, N. Y.
James, Dr. Walter B.....268 Madison Ave., New York, N. Y.
Jaques, William H.....30 West 73d St., New York, N. Y.
Jenkins, M. C.....143 Liberty St., New York, N. Y.
*Jesup, Morris K.....52 William St., New York, N. Y.
Johnson, Frank E.....Blithewood, Parkville, N. Y.
Johnson, R. U .....Century Magazine, New York, N. Y.
Jones, Miss Caroline Ogden.....293 Madison Ave., New York, N. Y.
Kelsey, Fred. W .....145 Broadway, New York, N. Y.
Kenyon, W. W .....368 Union St., Brooklyn, N. Y.
Kern, W. M.....840 East 166th St., New York, N. Y.
Kilduff, Thomas H.....115 Broadway, New York, N. Y.
King, Hon. John A .....Great Neck, Long Island, N. Y.
King, John S.....100 Reade St., New York, N. Y.
Kitching, Frank W..... .....894 Reade St., New York, N. Y.
Ledyard, L. W.....Cazenovia, N. Y.
MacNaughton, James .....86 State St., Albany, N. Y.
Marie, Peter.....48 West 19th St., New York, N. Y.
Marston, Edwin S.....217 Clinton Ave., Brooklyn, N. Y.
Martin, Edmnnd P.....Cor. Pearl and Pine Sts., New York, N. Y.
Meeker, Stephen J.....95 Clay St., New York, N. Y.
Meredith, Eugene.....Cazenovia, N. Y.
*Mills, A. G.....38 Park Row, New York, N. Y.
*Mills, D. O..... .....Mills Building, New York, N. Y.
Muller, L. G..... .....1 Broadway, New York, N. Y.
McCreedy, C. O.....Ballston Spa, N. Y.
Nash, Francis Philip, Jr.....Geneva, N. Y.
Noyes, Mrs. Anna..... .....233 Madison Ave., New York, N. Y.
Noyes, Dr. Henry D.....233 Madison Ave., New York, N. Y.
Peabody, Prof. Geo. L.....57 West 38th St., New York, N. Y.
Peck, Prof. Chas. H.....Botanist, State Hall, Albany, N. Y.
Pinchot, Gifford .....2 Gramercy Park, New York.
Pittinger, James H.....Carroll St., Brooklyn, N. Y.
Powell, Geo. T .....Ghent, N. Y.
Prentiss, Prof. Albert N.....Cornell University, Ithaca, N. Y.
Preston, Geo. R ....Cazenovia, N. Y.
Raymond, Rossiter..... .....13 Burling Slip, New York, N. Y.
Rose, Arthur P..... .....Geneva, Ontario Co., N. Y.
Satterlee, Mrs. Clarence.....102 East 31st St., New York, N. Y.
Schofield, Peter F.....Box 2951, New York, N. Y.

NEW YORK—*Continued.*

*See, Mrs. Horace.. .....40 West 9th St., New York, N. Y.
Segur, Anson G. P ....Hotel St. George, Brooklyn, N. Y.
Simpson, John B.....5 East 14th St., New York, N. Y.
Sissons, Rufus L.....Potsdam, N. Y.
Smythe, C. H., Jr.....Sec'y Wilmurt Club, Clinton, N. Y.
Spencer, Mrs. Lorillard.....107 East 17th St., New York, N. Y.
Spencer, Samuel.....80 Broadway, New York, N. Y.
*Stephens, W. Hudson... .....Lowville, N. Y.
Stimson, Henry L.....32 Nassau St., New York, N. Y.
Stoddard, S. R.....Glenns Falls, N. Y.
*Thayer, Dr. Wm. A.....Cooperstown, N. Y.
Thompson, Sidney De C.....Corn Exchange Bank Building, New York, N.Y.
*Thomson, Lemon.....8 Ten Broeck St., Albany, N. Y.
Tratman, E. E. Russell.....103 Tribune Building, New York, N. Y.
*Vanderbilt, George W.....640 Fifth Ave., New York, N. Y.
Vanderbilt & Hopkins.....126 Liberty St., New York, N. Y.
Wadsworth, W. Austin.....Geneseo, N. Y.
Walker, Alfred.....43 Liberty St., New York, N. Y.
Ward, Dr. Samuel B.....135 North Pearl St., Albany, N. Y.
Weed, Frederick A.....Potsdam, N. Y.
Weed, Wm. R.....Potsdam, N. Y.
Wetmore, Jacob S.....No. 2 Wall St., New York, N. Y.
Williams, Richard R.....124 St. James Place, Brooklyn, N. Y.
Wilson, James Grant.....15 East 74th St., New York, N. Y.

NORTH CAROLINA.

Ashe, W. W.....Raleigh, N. C.
Holmes, Prof. J. A .....State Geologist, Raleigh, N. C.
Schenck, C. Alwin.....Biltmore, N. C.

NORTH DAKOTA.

Barrett, W. W.....Church's Ferry, N. D.
Brown, C. G.....Minnewaukon, Benson Co., N. Dak.
Carrick, G. M.....Minto, Walsh Co., N. Dak.

OHIO.

*Bambach, George.....Ripley, Ohio.
Brown, Abraham ..... Fernbank, Ohio.
Brown, Miss Anne F .....North Bloomfield, Ohio.
Brown, Fayette.....Euclid Ave., Cleveland, Ohio.
Canfield, Pres. James H.....Columbus, O.
Chambers, D. B.....Stewart Iron Co., Cleveland, Ohio.
Eckley, Sidney.....331 Middle St., Dayton, Ohio.
*Fisher, W. Hubbell.....Cincinnati, Ohio.
Gamble, James N.....Carew Building, Cincinnati, Ohio.
Gano, John A.....College Hill, Cincinnati, Ohio.
Garrard, Jeptha.....44 Johnson Bldg., Cincinnati, Ohio.

OHIO—*Continued.*

Ingalls, M. E.....Pres. C. C. C. & St. L. R.R., Cincinnati, Ohio.
*Lazenby, Prof. Wm. R.....State University, Columbus, Ohio.
Mather, Wm. G.....Pres. Cleveland-Cliffs Iron Co., Cleveland, O.
Poindexter, Rev. James.....41 North 4th St., Columbus, Ohio.
*Read, Prof. Matthew C.....Hudson, Ohio.
Roelker, Frederick G.....Allen Bldg., Cincinnati, Ohio.
Schmidlapp, J. G.....Union Trust Co., Cincinnati, Ohio.
Springer, Dr. Alfred.....Cincinnati, Ohio.
*Steele, Robert W.....Dayton, Ohio.
Stein, Arthur.....Cincinnati, Ohio.
Storer, Hon. Bellamy.....Cincinnati, Ohio.
*Warder, Reuben H.....North Bend, Ohio.
Welty, Leo.....Wilmington, Ohio.

OREGON.

Applegate, Elmer I.....Klamath Falls, Oregon.
Applegate, O. C.....Olene, Klamath Co., Oregon.
Crawford, A. M.....Roseburgh, Douglas Co., Oregon.
Hammond, Edward W.....Wimer, Jackson Co., Oregon.
Lloyd, Prof. Francis E.....Pacific University, Forest Grove, Oregon.
Nickerson, Geo. S.....Klamath Falls, Oregon.
Pracht, Max.....Ashland, Oregon.
Scheydecker, M.....515 Hancock St., Portland, Oregon.

PENNSYLVANIA.

Adams, Robert, Jr.....124 South 16th St., Philadelphia, Pa.
Anders, Dr. J. M.....1605 Walnut St., Philadelphia, Pa.
Beale, Edward F., Jr.....231 Front St., Philadelphia, Pa.
Beaver, Hon. James A.....Bellefonte, Penn.
Birkinbine, John.....25 N. Juniper St., Philadelphia, Pa.
Cadwalader, John.....505 Chestnut St., Philadelphia, Pa.
Chase, Howard A.....1430 So. Penn. Square, Philadelphia, Pa.
Converse, John H.....500 North Broad St., Philadelphia, Pa.
Cope, Francis R.....Germantown, Philadelphia, Pa.
Coxe, Mrs. Brinton.....1515 Spruce St., Philadelphia, Pa.
Coxe, Mrs. Eckley B.....Drifton, Luzerne Co., Pa.
Eavenson, Howard M.....2013 Vine St., Philadelphia, Pa.
Edmunds, Hon. George F.....1505 Locust St., Philadelphia, Pa.
Elwyn, Rev. Alfred L.....1422 Walnut St., Philadelphia, Pa.
Esté, Charles.....20th St. above York St., Philadelphia, Pa.
Fisher, Miss Anne.....308 Walnut St., Philadelphia, Pa.
Fisher, Geo. H.....308 Walnut St., Philadelphia, Pa.
Fisher, Mrs. Geo. H.....308 Walnut St., Philadelphia, Pa.
Fisher, Dr. Henry M.....317 So. 12th St., Philadelphia, Pa.
Fox, Joseph M.....Broad and Pine Sts., Philadelphia, Pa.
Grant, J. Blackwood.....Douglassville, Berks Co., Pa.
Haines, Francis C.....Haines St., Germantown, Philadelphia, Pa.

PENNSYLVANIA—*Continued.*

Haseltine, Frank.....1825 Walnut St., Philadelphia, Pa.
*Haydon, James C.....Jeanesville, Luzerne Co., Pa.
Hester, Mrs. Geo. T.....Newtown, Pa.
Hutchinson, Pemberton S.....112 Chestnut St., Philadelphia, Pa.
James, H. F.....Franklin, Pa.
Jayne, H. La Barre.....505 Chestnut St., Philadelphia, Pa.
Kreuzpaintner, Paul.....1400 3d Ave., Altoona, Pa.
Landreth, Burnet.....Bristol, Pa.
*Lea, Henry Charles.....2000 Walnut St., Philadelphia, Pa.
Lundy, Mrs. J. P.....245 South 18th St., Philadelphia, Pa.
Maurice, C. S.....Wilmurt Club, Athens, Pa.
Montgomery, Dr. E. E.....1818 Arch St., Philadelphia, Pa.
Paul, J. Rodman.....505 Chestnut St., Philadelphia, Pa.
*Peabody, Chas. B.....1415 Spruce St., Philadelphia, Pa.
Porter, Prof. Thomas C.....Lafayette College, Easton, Penn.
Rothrock, Dr. J. T.....West Chester, Pa.
Ryman, Theodore.....So. Franklin St., Wilkes Barre, Pa.
Sellars, William.....1600 Hamilton St., Philadelphia, Pa.
Snyder, Geo. D.....City Engineer, Williamsport, Pa.
Stewardson, Thomas.....Montgomery Ave., Chestnut Hill, Phila., Pa.
Van Sant, Miss Belle.....Newtown, Bucks Co., Pa.
Vaux, J. W.....505 Chestnut St., Philadelphia, Pa.
Walker, William.....45 S. 3d St., Allegheny, Pa.
Welsh, Herbert.....1305 Arch St., Philadelphia, Pa.
Wilmsen, Bernhard.....43 Commerce St., Philadelphia, Pa.
Wolfe, Dr. S.....1701 Diamond St., Phila., Pa.
Wood, Stuart.....400 Chestnut St., Philadelphia, Pa.
Zimmerman, Dr. M. W.....1633 Chestnut St., Philadelphia, Pa.

RHODE ISLAND.

Brown, John Nicholas.....50 So. Main St., Providence, R. I.
Emmons, Arthur B.....Newport, R. I.
Mason, Miss Ida.....Rhode Island Ave., Newport, R. I.
Russell, Henry G.....East Greenwich, R. I.
*Wetmore, Geo. Peabody.....Newport, R. I.

SOUTH CAROLINA.

Green, Prof. H. A.....Chester, South Carolina.
Love, Col. R. A.....Chester, S. C.
McKie, Dr. Thomas J.....Woodlawn, S. C.

SOUTH DAKOTA.

McLouth, Dr. L.....Agr'l College, Brookings, S. D.
Williams, Prof. Thomas Albert..Brookings, So. Dakota.

TENNESSEE.

Callender, Dr. John H. ..... Nashville, Tenn.
Goulding, B. L. ..... Chattanooga, Tenn.
Wright, Thomas T. ..... Nashville, Tenn.

TEXAS.

Cline, Dr. Isaac M ..... Weather Bureau, Galveston, Texas.
Jones, W. Goodrich ..... Pres. Temple Nat. Bank, Temple, Texas.
Koppel, Mrs. I ..... 24th St. and Broadway, Galveston, Texas.
Montgomery, R. E. ..... Fort Worth, Texas.
Moore, J. E ..... Temple, Texas.
Nunnelly, J. B. ..... Temple, Texas.

UTAH.

Cannon, Geo. Q. ..... Salt Lake, Utah.
Park, Prof. John R. ..... Salt Lake, Utah.
Paul, Prof. J. H. ..... Agricultural College, Logan, Utah.
Whiting, Prof. C. A. ..... University of Utah, Salt Lake, Utah.

VERMONT.

Battell, Joseph. ..... Middlebury, Vt.
Cannon, Le Grand B. ..... Burlington, Vt.
Fairbanks, Mrs. Horace ..... St. Johnsbury, Vt.
Fuller, Levi K. ..... Brattleboro, Vt.
Grout, Hon. W. W. ..... Barton, Vt.
Lawton, Dr. S. E. ..... Brattleboro, Vt.
Proctor, Hon. Redfield. ..... Proctor, Vt.
Titcomb, John W. ..... St. Johnsbury, Vt.

VIRGINIA.

Nourse, D. O. ..... Blacksburg, Va.

WASHINGTON.

Harrington, Prof. Mark W. ..... University of Washington, Seattle, Wash.
Lesh, Daniel E. ..... North Yakima, Wash.
Meany, Edmund S. ..... University of Washington, Seattle, Wash.
Page, Miss Anne ..... Buckley, Wash.
Scudder, H. B. ..... North Yakima, Wash.

WEST VIRGINIA.

Corbett, Prof. L. C. ..... Morgantown, W. Va.
Hopkins, Prof. A. D. ..... Morgantown, W. Va.

WISCONSIN.

Adams, Pres. Charles K.....Madison, Wis.
Putnam, H. C .....Eau Claire, Wis.
Schinke, Max. G..... .....Asst. City Engineer, Milwaukee, Wis.
Starr, Wm. J.....Eau Claire, Wis.
Swift, Elijah.....Eau Claire, Wis.
Upham, W. H.....Marshfield, Wis.
Weyerhauser, Fred.....Chippewa Falls, Wis.

WYOMING.

Mead, Elwood.....Cheyenne, Wyo.

CANADA.

Aberdeen, His Excellency the
Earl of..... .....Government House, Ottawa, Canada.
Allan, George William.. .....Moss Park, Toronto, Canada.
Boyd, M. M.....Bobcageon, Ontario, Canada.
Campbell, Archibald.....Quebec, Canada.
Chapais, J. C.....St. Denis, Kanawaska Co., Quebec, Canada.
Craig, John ....Dominion Expt. Farm, Ottawa, Canada.
Crown Lands, Department of.....Quebec, Canada.
Crown Lands, Department of.....Treasury Department, Toronto, Canada.
*Denton, John M.....London, Ontario, Canada.
*Drummond, Andrew T.....265 University St., Montreal, Canada.
Heneker, R. W.....Sherbroke, Quebec, Canada.
*Joly de Lotbinière, Sir H. G....Point Platon, Quebec, Canada.
Little, William.....404 Board of Trade, Montreal, Quebec, Canada.
Macauley, Thomas B.....Westmount, Montreal, Canada.
Price, Herbert M.....Quebec, Canada.
Robitaille, L. A..... .....Box 652, Quebec, Canada.
Ross, David.....P. O. Box 222, Quebec, Canada.
Saunders, Prof. Wm.....Experimental Station, Ottawa, Canada.
Shanley, Walter..... .....Montreal, Canada.
Thane, E. S.....Ottawa, Ontario, Canada.
Turner, Richard ....Quebec, Canada.

CONSTITUTION

OF THE

AMERICAN FORESTRY ASSOCIATION.

ARTICLE 1. This association shall be known as the American Forestry Association.

ARTICLE 2. The objects of this association shall be the discussion of subjects relating to tree-planting, the conservation, management, and renewal of forests, and the climatic and other influences that affect their welfare; the collection of forest statistics; and the advancement of educational, legislative, or other measures tending to the promotion of these objects. It shall especially endeavor to centralize the work done and diffuse the knowledge gained.

ARTICLE 3. Any person may become a member of this association, subject to approval by the executive committee, by the payment of the annual dues. The annual dues shall be two dollars. Any member may become, by the payment of fifty dollars at one time, a life member, and shall not be liable thereafter to annual dues. Any person contributing one hundred dollars to the permanent fund of the association shall be a Patron. The members of any local forestry association which shall vote to affiliate itself with the American Forestry Association, under such rules as the executive committee may adopt, shall become, by virtue of their membership in the local association, associate members of the American Forestry Association, and be entitled to all of the privileges of regular members, except the right to vote and hold office in the American Forestry Association.

ARTICLE 4. The officers of this association, to be elected at the annual meeting, shall be a president, one vice-president for each state, territory, and province represented in the association, a treasurer, a recording secretary, a corresponding secretary, and six other persons to serve on the executive committee. The executive committee shall consist of the president, the vice-president for the District of Columbia, the treasurer, the two secretaries, together with the six persons above designated. Three of this committee shall constitute a quorum. This committee shall choose its own chairman.

ARTICLE 5. The president shall preside at all meetings of the association in general session, and in his absence a vice-president shall preside.

ARTICLE 6. The recording secretary shall keep a record of the proceedings

of the association, and shall be custodian of all documents, books, and collections ordered to be preserved.

ARTICLE 7. The corresponding secretary shall conduct the correspondence of the association.

ARTICLE 8. The treasurer shall have charge of all funds, and pay out the same on the direction of the executive committee.

ARTICLE 9. The association at any regular meeting, or its executive committee in the intervals between its meetings, may appoint such local or special committees as may be deemed proper, and shall define their duties.

ARTICLE 10. The annual meeting of the association shall be in the months of August, September, or October, or at such times and places as shall be determined by a vote in general session, or by the executive committee. Special meetings may be called by the executive committee.

ARTICLE 11. At each annual meeting there shall be an election of officers for the ensuing year, and they shall remain in office until others are chosen. In cases of vacancies occurring in the intervals between the annual meetings, they may be filled by the executive committee until others are selected. In case of absence of an officer at a regular meeting his place may be deemed vacant.

ARTICLE 12. The officers of states, territories, provinces, or local forestry associations, or their delegates, or the delegates of any Government, may participate in the proceedings of the association as honorary members.

ARTICLE 13. This constitution may be amended by a two-thirds vote of the members present at any annual meeting.

BY-LAWS.

1. Papers or abstracts of papers to be read must be sent two weeks before any meeting, for classification, to the corresponding secretary.

2. The following classification of subjects is adopted for the reading of papers:

Section A. Forest planting, forest management, forestry proper, preservation of forests.

Section B. Forest economy, technology and statistics.

Section C. Applied science and climatology, general topics.

3. Contributors who are present shall have the preference in reading their papers.

4. Any member shall be entitled to the privilege of using any books or documents, not of record, at the discretion of the recording secretary.

SPECIAL MEETINGS

AT

Brooklyn, New York, and in the White Mountains, New Hampshire.

By invitation of citizens of Brooklyn and of the New Hampshire Forestry Commission, the Association held meetings August 21 to 27, 1894, consecutively, in Brooklyn and in the White Mountains, conjointly with the American Association for the Advancement of Science.

The evening of August 21st was devoted to a lecture by Mr. Fernow on "The Battle of the Forest." On the following day, in the absence of the President, Rev. George W. Minier, one of the Vice-Presidents, occupied the chair. A number of persons proposed for membership in the Association were elected.

Mr. J. C. Chapais, delegate from the Province of Quebec, delivered an address on the condition of the forests in that Province.

Mr. William H. Dall, of the Smithsonian Institution, then spoke on the Forests of Alaska. His remarks were based upon personal observations made at various times during the last thirty years. Prof. J. C. Smock, State Geologist of New Jersey, read a paper on the forests of that State. He called attention to the geologic division of the State into five nearly parallel sections with corresponding forestry conditions. Much of the northern portion of the State has been to a great extent denuded, so that this section suffers from droughts and the effect of sweeping winds, seriously affecting the agricultural interests. The southern or coastal plain region has a large amount of forest, but it is mostly of a low, scrubby character, of little commercial value. Forestry in New Jersey, on account of the water supply, is of vital importance to the large and increasing population, especially in the neighborhood of Newark and of New York. The next address was by Mr. Verplanck Colvin, on the Adirondack Forests.

Mr. Fernow spoke on the Condition of our Public Timber Lands and Forest Reservations, and offered the following resolution, which was unanimously adopted:

Resolved, That the American Forestry Association desires to express again, emphatically, its approval of the efforts of the Public Lands Committee of the House of Representatives, and its chairman, the Hon. Thomas C. McRae, for the enactment of a law providing not only for the care and protection but also for the rational use of the timber and other resources in the forest reservations and on all public timber lands. The policy of reserving can hardly be considered an advantage to the forestry interests unless followed up by an intelligent and efficient administration of the reservations.

This Association emphatically denies that it advocates, in the policy of forest reservations, the unintelligent exclusion from use of large territories and the resources contained therein, but, on the contrary, it reiterates that it conceives the reservations made for the purpose of their rational use, under restrictions and control, apart from private interests, in expectation of possible occupancy. If uncared for by the rightful owner, the Government, the door is opened to greater destruction and depredation than before. We, therefore, desire to impress upon our representatives in Congress the immediate necessity of making provision for the better care of the public timber and other resources, as urged heretofore by this Association.

After the adoption of the foregoing resolution, the chairman, Mr. Minier, read a paper on Tree Planting, and the Association took a recess till afternoon.

At the afternoon session Professor A. D. Hopkins, of West Virginia, in a discussion of the Relations of Insects and Birds to Present Forest Conditions, noted the interdependence and mutual checks of animal and vegetable life under natural conditions, and pointed out as one of the effects of forest removal in certain districts of West Virginia the destructive work of the spruce insects and pine bark beetle, which afforded an unusual opportunity for the study of insect life as affecting forest growth, and the utility of birds as insect destroyers. He controverted the generally accepted belief that birds are especially useful as the destroyers of noxious insects, taking the position that they kill as many helpful as harmful species, and hence have little influence on the problem, one way or the other.

Professor F. H. King, of Wisconsin, in a paper on Windbreaks, gave numerous experiments to show the effectiveness of windbreaks in preventing evaporation from the soil of protected fields, and urged their great utility, especially in light soils.

Mr. John Gifford, of New Jersey, presented a paper on Forest Fires in South Jersey. After mentioning the principal causes of fires, he noted one instance of malicious incendiarism, in which 60,000 acres of timber were burned. Young timber is killed outright by these fires, and the vitality of old trees is greatly im-

paired. The country has been reduced to a barren condition over large areas by repeated fires. Two hundred thousand acres of woodlands have been burned over in the last six months. A recently enacted fire law will be helpful, and a society for the prevention of forest destruction has been formed.

Mr. H. C. Hovey, of Massachusetts, in an instructive lecture, illustrated with lantern slides, on the Petrified Forests of Arizona, pointed out that these interesting and valuable remnants of former forest glory were just as rapidly and wantonly destroyed as the present forests, by grinding them into emery.

Other papers read were as follows: Western Pine Timberlands, H. C. Putnam, Wisconsin; Prevention of Forest Fires, C. C. Andrews, Minnesota; Prairie Forestry, L. H. Pammel, Iowa.

Other papers were offered, but for lack of time could only be read by title.

Thursday, August 23, was given up to an excursion by steamboat to West Point on the Hudson, by invitation of the Brooklyn committee of arrangements.

On Friday evening the Association convened for another meeting, under the auspices of the New Hampshire Forestry Commission, at Plymouth, New Hampshire. The Hon. William E. Chandler, Vice-President of the Association for New Hampshire, presided. After an address of welcome by the Hon. Geo. H. Adams, the Hon. Joseph B. Walker, of Concord, gave a very full and detailed account of the history, development, and present condition of the White Mountain region, embracing the legislation which had been obtained for the protection of the forests, and the difficulties of preventing their destruction. Mr. George H. Moses, secretary of the New Hampshire Forestry Commission, then gave a foretaste of the scenes awaiting the Association on the following days of the meeting by exhibiting some beautiful lantern slides presenting views of the mountain region.

On Saturday, August 25, by courtesy of Messrs. Henry and Sons, the Association was taken to their extensive lumber camps and sawmills in the Pemigewasset Valley. From their mills the Association went to the Flume House, remaining only long enough for dinner and a visit to the "Flume," and then took carriages for the Profile House. Here, in the evening, a session was held in the spacious dining-room, and the guests of the house were invited to be present. The Hon. Mr. Chandler presided, and made an opening address, in which he spoke of the reckless methods of the lumbermen in prose-

cuting their business. He then introduced Mr. George B. James, editor of the *American Cultivator* and president of the New Hampshire Land Company. Mr. James advocated the formation of a large association or league for the purpose of saving the mountain forests by purchase. Mr. J. R. Edmunds, representing the Appalachian Club, and Warren Higley, Esq., of New York, representing the Adirondack League Club, spoke in the same line with Mr. James. Mr. George T. Crawford, of Boston, for many years a forest surveyor, said a good word for the pulp mill owners, saying that they took only the spruce that was more than twelve inches in diameter. Mr. Fernow spoke on the different purposes served by the forests, and urged the great importance of the enactment of proper fire laws as necessary to forest preservation.

Sunday was by most members of the Association spent quietly at the Profile House, a portion, however, making an excursion to the summit of Mount Washington, which was not included in the itinerary.

On Monday, August 27, the Association spent the day in going through the Crawford Notch to Glen Station. Here carriages were in waiting to convey them to Wentworth Hall, in the town of Jackson. In the evening another and final session was held. Mr. F. H. Appleton, of Boston, Vice-President for Massachusetts, presided. Senator Chandler again addressed the Association, some business matters were attended to, several new members were elected, and in the absence of Dr. Rothrock, who had been expected to lecture, Mr. Fernow repeated his lecture on the Battle of the Forest. The meeting then adjourned after a most enjoyable excursion, and one which gave unusual opportunity for studying the forests.

N. H. Egleston,
Secretary.

Thirteenth Annual Meeting.
1894.

The thirteenth annual meeting of the American Forestry Association was held at the Department of Agriculture, Washington, D. C., on the 28th day of December, 1894.

In the absence of the President or any of the Vice-Presidents, Mr. Fernow was appointed chairman. Before the formal business of the Association was entered upon, by a previous arrangement of the Executive Committee, the members of the Association present proceeded to the Executive Mansion to meet the President of the United States and commend to his favorable consideration and helpful action the work of the Association for the preservation of the public forests. The President received the Association with courtesy, listened to their statements with attention, expressed his increasing interest in their work, and promised to give whatever assistance was in his power.

On the return of the Association from the visit to the President, the Recording Secretary read the minutes of the last annual meeting, which were approved. The Corresponding Secretary then read his annual report, which was accepted. On motion, a Committee on Resolutions and Nominations was appointed by the chairman, consisting of Messrs. Keffer, Owen, Moses, French, and Warder. The report of the Executive Committee was then read, accepted, and referred to the Committee on Resolutions and Nominations. A number of persons were proposed for membership, the names being referred to the Executive Committee for final action.

A proposal was offered that the Association should hold a special meeting in California, in connection with the meeting there of the American Association for the Advancement of Science. This was favorably referred to the Executive Committee. By request, Prof. Marcus E. Jones, of Utah, made a statement in regard to the forest condition of that State. He reported great destruction of the forests, and said that sheep had injured the grass to a great extent upon the higher grounds; also had prevented the growth of new forests. The farmers of Utah are generally opposed to the sheep industry, as being destructive of the forests. They desire the establishment of Forest Reserves, especially one around Fish Lake.

Mr. Moses spoke in regard to the condition of forestry in New Hampshire. He said that the Forest Commission are endeavoring to increase popular interest in the preservation of the mountain forests, to secure legislation to prevent forest fires, and to induce lumbermen to use a more rational method of carrying on their work. Mr. Gifford spoke of the cause of forestry in South New Jersey. He reported a great destruction of forests by lightning. He said that some progress was being made in forest education through the schools and by the publication of a forestry paper. A Forestry Association has been formed, which has now one hundred members. Mr. Owen said that the mountains of northern New Jersey had been stripped of their original forests. Trees now were largely cut when of the hoop-pole size. The greatest interest now is in regard to the water supply. An effort is being made to establish county parks. He said there is probably more worthless timber land in New Jersey than in any other State.

At the afternoon session the report of the Treasurer was read and referred to Messrs. Gifford and Luebkert as an auditing committee. The Committee on Resolutions and Nominations reported as officers for the ensuing year those now in office, with the following changes: Mr. F. H. Newell as Corresponding Secretary in place of Mr. J. D. W. French, who declined further service as such, and on the Executive Committee Mr. Keffer in place of Dr. J. D. Jones, and Prof. R. B. Warder in place of Mr. Newell, elected Corresponding Secretary.

The Executive Committee were authorized to provide for the expenses of the office of the Corresponding Secretary for the ensuing year. The Committee on Resolutions and Nominations reported for adoption the following resolutions:

Resolved, That The American Forestry Association finds reason for encouragement in the increased interest shown in the forestry question during the past year, and pledges its continued support to every movement tending toward the enlightenment of the people upon this important subject.

Resolved, That we hereby express our gratification at the passage of the McRae bill in the lower House of Congress, and tender our thanks to our associate, the Hon. Thomas C. McRae, for his energetic, well-directed, and successful endeavors in behalf of the principles for which this Association stands.

Resolved, That we urge upon the committee of the Senate, to whom the measure has been referred, to report the same at an early date, with such amendments as may more fully secure the objects of the bill, and we urge upon the whole body of Senators the necessity of passing the same without delay.

Resolved, That we recommend national legislation looking toward the estab-

lishment of courses of instruction in forestry in such institutions as are benefited by aid from the public treasury, and the establishment of a National Forestry School in some part of the national domain.

Resolved, That the appalling results of forest fires experienced in many States during the past summer compel the belief that the present statutory protection against forest fires in these States is inadequate or negligently applied. And we appeal, therefore, to these States, in the interest of rational husbandry and in the name of humanity, to enact and enforce such legislation as will prevent the recurrence of such serious loss of life and property.

The resolutions were adopted and referred to the Executive Committee for publication and for distribution to various State officials. The Committee on Resolutions and Nominations reported back for adoption the reports of the Corresponding Secretary and the Executive Committee, and they were adopted. On motion, it was

Resolved, That the Association takes pleasure in expressing its thanks to Mr. J. D. W. French for his earnestness and fidelity in discharging the duties of Corresponding Secretary, and his kindness in giving his services under the disadvantages of his situation and other demands upon his time and attention.

A sketch of a bill for the establishment of a Post Graduate School of Forestry in connection with the Division of Forestry in the Department of Agriculture was offered informally for the consideration of the Association. The subject was discussed briefly with much interest by Messrs. French, Newell, and Ledyard.

The Auditing Committee reported that the account of the Treasurer had been examined and found to be correct. At 5 o'clock the Association adjourned, subject to the call of the Executive Committee. In the evening a joint meeting with the National Geographic Society was held, to listen to an address by Prof. N. S. Shaler, of Harvard University, upon the Economic Aspects of Erosion.

N. H. Egleston,
Secretary.

Special Meeting at Springfield, Mass.

1895.

The Association held its summer meeting for 1895 at Springfield, Massachusetts, on September 4th and 5th, in connection with the American Association for the Advancement of Science.

The President of this Association, the Hon. J. Sterling Morton, Secretary of Agriculture, was prevented by official business from attending, but sent his regards, together with expressions of deep interest in the objects of the meeting.

Capt. Francis H. Appleton, Vice-President for Massachusetts, presided and opened the session by a brief address detailing the condition of forestry in Massachusetts and referring to the action of the State Board of Agriculture through its Forestry Division. The first business was the appointment of Messrs. Fernow, Higley, Moses, Walker, and Appleton as a Committee on Resolutions to report at the end of the session. The Hon. G. F. Talbot, of Maine, made an address in which he advocated that all worthless lands forfeited by tax sales be permanently held by the State and devoted to the purpose of the production of trees, such lands being admirably adapted to this end. He spoke of the fire laws of Maine and stated that the adverse interests of forest owners was the great obstacle to any reform in the direction of proper control. Under a sharp competition the land was stripped of everything salable and the refuse left where it happened to fall, thus ultimately becoming, through its inflammability, a menace to all neighboring property.

Mr. George H. Moses, Secretary of the New Hampshire Forestry Commission, reviewed the history of legislative attempts to provide suitable protection to the forests, and spoke of the creation of the present Commission, organized to investigate the extent and character of the forest cover, the removal of lumber, the annual receipts, and the general relations of forests to climate, water, and health. The commissioners are empowered simply to investigate, but much of their energy has been given to attempts to convince the lumbermen that it is for their personal interests as well as that of the State to introduce less wasteful and destructive methods. They are also striving to preserve some of the natural beauties of the White Moun-

tain region, as the summer resorts, if destroyed or injured, will cause great annual loss to the State.

Hon. Joseph B. Walker, of Concord, New Hampshire, followed with a description of the present condition of the forests, especially those in the northern portion of the State. Here large areas are owned by individuals whose sole object is to make the most money in the shortest period, and who have no interest in obtaining a future crop of trees. Everything is cut that can be sold, either for lumber or matches. Vast sections are denuded one after the other, the fires in the "slasings" sweeping the ground clean after the lumbermen have left. There is a beginning, mainly from the sentimental side, to make an attempt to prevent this great destruction, and the fire laws have been so improved that the selectmen or county commissioners are required to appoint fire wardens, whose duties include the watching for fires and the summoning of aid to prevent their spread. No penalty for failure is provided, but popular sentiment is being aroused to such an extent as to render the law generally effective. The farmer is beginning to appreciate the necessity of the forests, as these, if properly managed, will furnish him opportunity for labor during the winter months. At present he labors seven months of the year, and from his farm alone cannot derive revenue for the remaining five months.

Rev. Julius H. Ward, of the editorial staff of the Boston *Herald*, read a paper on the present situation in the White Mountains. He noted the increased regard being expressed by lumbermen for the young trees which ultimately should become valuable for lumber. He described the ordinary operations, and stated that the companies now at work in the White Mountains expected to cut everything before them, not leaving a stick of any value.

Mr. Charles Eliot, of the firm of Olmsted, Olmsted & Eliot, of Brookline, Mass., read a paper on the new public forests near Boston, illustrating this by maps of the locations of these forests and described their general characteristics. The most important of these public reservations is the Blue Hills area, consisting mainly of rugged hills and swamps. Next in importance are the Middlesex Falls, and besides these are numerous smaller localities notable for the beauty of their scenery. The chief enemy to these is fire, and, to guard against this, the larger reservations are blocked out into fire districts, and watchmen employed to patrol the grounds.

Mr. E. H. Forbush, Director of Field Work of the Gypsy Moth Department of the Massachusetts Board of Agriculture, spoke of

the work in confining this insect pest within certain limits. It originated in specimens imported by an entomologist, these escaping and multiplying until the trees and bushes within many towns were destroyed as completely as by fire. By means of sufficient appropriations it would be possible to exterminate this insect, but Massachusetts has only granted a sum sufficient to hold it in check. Thus there is constant danger that the moth may escape and start new colonies in every direction. If allowed to spread it may overrun the whole country. He stated that the native birds will not eat the eggs of this insect, but that possibly some foreign birds which eat the eggs in their own country might be imported.

Mr. Cornelius C. Vermeule, of the New Jersey Geological Survey, read a paper upon forests and rivers, this relating mainly to the conditions within the State of New Jersey, reference being made to data from Massachusetts, New York, and Pennsylvania. In his conclusions he stated that the river measurements failed to indicate any notable effect of forests upon evaporation or upon the very highest or lowest rate of flow. The measurements do show what is quite as important, namely, a more equable flow, fewer floods, and shorter periods of extreme low water upon well forested catchments. Some of Mr. Vermeule's conclusions were called in question by Mr. Fernow as not being applicable beyond the areas studied.

Hon. Warren Higley, of New York, spoke of the progress of legislation in his State, and described the inception and growth of the Adirondack Park. The lands within the Park limits are being acquired by the State through tax sales or by purchase, excepting such as are owned or controlled by clubs or corporations whose interests in forest protection are identical with those of the State. It was the original intention to manage this Park upon rational principles and dispose of the ripe trees for timber wherever this could be done without injury, but the Constitutional Convention adopted a provision against the sale of any timber upon lands owned or to be acquired by the State, the people thus putting themselves upon record as being able to buy and maintain these forests without the aid of revenue from the sale of forest products.

Colonel William Fox, Superintendent in charge of the State Forests, briefly described the organization of the commission under which he is employed, and stated that it was the intention to purchase 80,000 acres as soon as possible. The forests could undoubtedly be improved by cutting, but, since this was prohibited by the

constitution, a rational system of forestry must be held in abeyance for the present.

Prof. J. C. Smock, State Geologist of New Jersey, stated that some of the largest land holdings in that part of the country are in southern New Jersey. The Geological Survey is performing, to a certain extent, some of the functions of a forest commission and is making examinations as to the relation of forests to water supply and sanitary conditions. The agricultural interests are as a rule subordinate in New Jersey to the question of water supply, especially in the northern part of the State, where are situated the great metropolitan districts. For the southern part the main source of anxiety is the forest fires, one of these alone having burned over and destroyed probably a million dollars' worth of lumber and other property. Such a fire leaves only the bare white sand, destroying even the soil.

Baron Beno Reinhardt von Herman, Chamberlain to the King of Würtemberg, Forestry Councillor and at present Attaché for Forestry and Agriculture to the German Legation, read a brief address upon forestry management in Germany, and spoke of the special education of the foresters in colleges devoted to this purpose, and their subsequent training by practical experience in the woods.

The remaining papers on the program for Tuesday were not read owing to the absence of their authors. Adjournment was taken till Wednesday, September 4th.

On Wednesday morning, September 4th, the session was called to order by Vice-President Appleton, the first paper being by Mr. T. S. Gold, Secretary of the Board of Agriculture of Connecticut. He spoke of the causes tending to re-establish wood growth in his State, these being mainly the decrease of profit in wood cutting, owing to the extinction of the iron furnaces. Many trees are being set by the roadside and the State has enacted legislation protecting such trees. Spikes having the letter "C" in the head are to be provided, and when driven into one of the roadside or shade trees this spike must not be removed even by the owner, and any destruction or injury to the tree is punishable by a heavy penalty. The drought of the past year has destroyed many trees, especially the chestnut, resulting in widespread injury to woodlands.

Dr. B. G. Northrop, of Clinton, Connecticut, described the interest shown in Arbor Day in the Hawaiian Islands and in Japan, at the time of his visit to those countries. In Japan the Emperor's birthday has been designated as Arbor Day, memorial trees being

planted in his honor. Great enthusiasm was expressed and interest shown in the reclamation of sea-coast and the planting of the sand dunes.

A letter from the Hon. J. Sterling Morton, President of the Association, was read. This called attention to the necessity of urging upon the States legislation compelling the proper care of waste from timber cutting in order to prevent forest fires. Mr. Morton also wrote of the necessity of bringing about co-operation between the United States Geological Survey and the Forestry Division of the Agricultural Department, in order that during the preparation of the topographic map the forest areas might be properly represented. He showed that by slight additional expense it would be possible for an expert to classify the woodlands while the map was being made, and obtain the material for a report upon the condition and value of the forests, and the steps to be taken for the proper protection or treatment of these resources. By this means the completed map would show not only the altitude and slopes of the country, the roads, trails, and improvements, but also the character and extent of the timber.

Mr. F. H. Newell, Secretary of the Association, spoke of the progress of the great map of the United States now being prepared by the United States Geological Survey, and described the methods of representing wooded areas, dwelling upon the benefits which would follow the more accurate designation of timber lands. By suitable co-operation with the Agricultural Department, it might be possible to concentrate efforts upon the areas covered by the national forest reservations and complete the mapping and description of these within a few years. Remarks were made by Messrs. Talbot, Moses, Elwyn, Pinchot, Smock, and others, showing the inaccuracy of the present information concerning the forests and the difficulties of obtaining exact facts through local officials.

Mr. George T. Powell, of Ghent, New York, spoke upon the benefit to the farmers of the preservation of forest areas. He stated that too many unproductive acres are now cultivated, and that in the Eastern States often the cost of production exceeded the value received. By tilling a smaller number of acres with greater care and devoting the poorer lands to the growth of timber far larger results might be obtained.

At this point Mr. Appleton resigned the chair to Hon. Warren Higley, Vice-President for New York. A discussion was entered into as to the necessity and value to this Association of a forestry

journal. This was participated in by Messrs. Fernow, Newell, Talbot, Ward, and Pinchot, the general opinion being that such a journal was highly desirable, provided the editorial and business management could be undertaken by any competent person. On motion of Dr. G. B. Northrop, the matter was referred to the Executive Committee, with power to act.

Mr. B. E. Fernow, Chief of the Forestry Division, at the beginning of the afternoon session made a statement as to the progress in national forestry legislation, and reviewed the history of attempts made in the past to secure passage of bills endorsed by this Association.

Mr. R. U. Johnson, of the *Century Magazine*, then spoke of the action of the New York Chamber of Commerce and Board of Trade, and urged the advisability of endorsing the resolution of that body calling for the creation by Congress of a Forestry Commission, consisting of three persons, empowered to examine into the forest conditions of the country.

Mr. Gifford Pinchot then read a paper upon the present condition of the national forests and the necessity of action in protecting them. He held that, since past efforts of this Association had been in a large degree ineffectual, the proper method of procedure was through a Forest Commission such as that proposed by Mr. Johnson. His views were strongly controverted by Mr. B. E. Fernow on the ground that the time was ripe for action rather than for investigation, and that Congress would be more likely to consider legislation already discussed during the past session rather than take a backward step in the appointment of a commission. The matter was urged by Messrs. Johnson and Pinchot, and under a suspension of the rules the following resolution was adopted:

Resolved, That we, this Association, join with the New York Chamber of Commerce and Board of Trade in hearty advocacy of the establishment of a Forestry Commission of three members to make a thorough investigation of the public forest lands, and to make recommendations concerning their disposition and treatment, and the Executive Committee is hereby directed to represent the Association in support of such legislation.

Prof. Dwight Porter, of the Massachusetts Institute of Technology, read a paper upon the fluctuations of water supply in Connecticut river and the possible connection between these and forest removal. His general conclusion was that, as far as the flow of the lower river is concerned, there is no proof of permanent injury through cutting of the forests at the head waters. Mr. Talbot called

attention to the fact that, taking the basin as a whole, there might be at present as much growing timber as formerly, since on this point there are no statistics available.

Mr. Leonard W. Ross, of Boston, read a paper upon sea-coast planting as practised on the Province lands of Cape Cod, and described the attempts being made to prevent the shifting sands at the extremity of Cape Cod from injuring the settlements and harbor. He spoke of the various kinds of grasses and shrubs which have been planted to hold the sands, and of the results attained, and exhibited specimens showing the cutting of twigs due to the sand carried by the wind.

Mr. H. C. Bliss, of Springfield, Massachusetts, read a description of methods of planting trees in the vicinity of his city. He has planted an average of 100 trees a year for over twelve years, and has had great success in thus adding to the beauty of the various streets. He described his methods and offered many practical suggestions.

Mr. John M. Woods, of Boston, Massachusetts, described the changes in the hard-wood trade during the past thirty years, and spoke of the uses of the more valuable of the ornamental woods native in the eastern and southern parts of the United States.

Hon. G. F. Talbot presented a formal invitation from the Governor of Maine and the Mayor of Portland, inviting the Association to hold a meeting at Portland, Maine, during the next summer. Invitations were referred to the Executive Committee for action.

The Committee on Resolutions then made its formal report, and the following resolutions were adopted paragraph by paragraph, after which the Association adjourned:

Resolved, That the American Forestry Association learns with satisfaction of the recent enactment of laws for the protection of forest property against destruction by fire in Wisconsin and Minnesota, and of the successful operation of such laws in Maine, New Hampshire, and New York, deprecating at the same time the continuance of forest destruction by fire in other States, and especially on the public domain.

That the question of dealing with forest fires is still the first and most important one to be settled in nearly all the States of the Union before rational forestry methods can become practicable.

That inasmuch as forestry property is taxed for the support of government, it has the same right to consideration and protection as other property, and that the legislatures of the different States which have no efficient forest-fire laws are recommended to provide the same.

That the policy of establishing forest reservations and parks is to be encouraged, and for the purpose it is recommended that timber lands offered for sale

for non-payment of taxes be acquired by the State and held to form the nucleu of State forest reservations.

That it is the first duty of Congress in regard to the public timber lands to enact proper legislation for the national protection and administration of the forest reservations and unreserved timber lands, and we appeal to the Public Lands Committees of the Senate and House of Representatives to secure the passage of bills which received the sanction of the Senate and House of Representatives in the 53d Congress, and failed to become laws only for lack of time for consideration of amendments in conference.

That the American Forestry Association, recognizing that a practical advance in rational forestry methods requires the services of men trained in forestry practice, indorse the legislation proposed in the last Congress by Mr. Hainer, and expresses the hope that the same will be enacted during the coming Congress.

That the knowledge of the extent and conditions of our forest resources is a necessary basis for intelligent forest legislation, and that therefore the American Forestry Association recommends the co-operation of various Government departments as far as practicable in ascertaining these areas and conditions, and especially recommends that both a topographic and forestal survey of National Forest Reserves be instituted.

F. H. Newell,
Corresponding Secretary.

Fourteenth Annual Meeting,
1896.

The fourteenth annual meeting of the American Forestry Association was held in Washington, D. C., on the 24th day of January, 1896. In the absence of the President and Vice-Presidents, Mr. Fernow was chosen chairman.

The report of the Corresponding Secretary was read showing, among other things, the election of 192 new members during the last year. The report was accepted and approved, with the suggestion that in publishing a list of the members their geographical location be designated.

The report of the Treasurer was read, accepted, and referred to Messrs. O. J. J. Luebkert and G. B. Sudworth as an auditing committee.

As the report of the Treasurer has not been published for a number of years, the following abstract has been prepared covering the expenses and receipts for the entire period since date of the report printed on page 32 of volume VIII:

Henry M. Fisher, Treasurer, in account with American Forestry Association.

Dr.

Dec. 30, 1890.	Balance to credit of current expenses	$136 20
	Balance to credit life membership fund	550 00
Dec. 28, 1891.	Receipts from life memberships, interest $12.87	262 87
	Annual dues and contributions, interest $4.33	453 33
Dec. 29, 1892.	Receipts from life memberships, interest $20.49	120 49
	Annual dues and contributions, interest $5.37	388 37
	Receipts from sale of proceedings	1 00
Dec. 20, 1893.	Annual dues and contributions, interest $11.36	357 11
	Receipts from sale of proceedings, etc.	4 00
Dec. 27, 1894.	General Secretary fund, interest $29.02	1,023 11
	Receipts from life memberships, interest $58.34	258 34
	Annual dues and contributions, interest $9.94	684 19
	Receipts from sale of proceedings, etc	5 00
Dec. 28, 1895.	Interest on general Secretary fund	40 37
	Receipts from life memberships, interest $34.98	384 98
	Annual dues and contributions	1,072 50
	Interest on U. S. bonds	75 00
	Receipts from sale of proceedings	10 10
		$5,726 86

Cr.

Dec. 28, 1891.	Expenses for printing, postage, etc	$409 69
Dec. 29, 1892.	Postage, $26.24; stationery, $24.80	51 04
	Printing	48 83
	Type-writing, $33.90; advertising, $10.00; sundries, $26.75	70 65
	Forest Leaves	36 56
Dec. 15, 1893.	Postage, $24.70; type-writing, $32.15; papers, $15.81	72 66
	Printing	20 10
	Forest Leaves, 1892 and 1893, 3,297 copies at 8 cents,	263 76
	Painting for World's Fair	50 00
	Counsel before Committee on Public Lands	125 00
Dec. 31, 1894.	Postage, stationery, and expressage	128 41
	Printing proceedings, circulars, etc	400 80
	Forest Leaves, 1894, 2,272 copies at 8 cents	181 76
	Type-writing, $9.50; clerical service, $49.78	59 28
Dec. 31, 1895.	Postage, $143.74; stationery, $21.15	164 89
	Printing proceedings, etc	393 70
	Forest Leaves	223 04
	Clerical services ($60.74, $183.36), Secretary's travelling expenses	269 10
	Advertising, $8.00, express, etc	12 81
	Bonds 2, $1,000, U. S. 5's ($1,053.80 from general Secretary account)	2,297 50
	Balance current expense account	114 30
	Balance life membership account	332 98
		$5,726 86

The report of the Executive Committee was then read as follows:

The year has witnessed a very considerable increase of interest in the forestry movement, which is reflected not only by a large increase in the membership of our Association and by a more general appreciation of our efforts in the press (and more especially the lumber trade journals), but also by definite progress in the establishment of forestry principles in various parts of the country.

Of more interest to us directly is the progress in the establishment of a rational policy with reference to the public timber lands.

At the last annual meeting, occurring during the Christmas holidays, it was a pleasant duty to announce the passage by the House of Representatives of the McRae bill, which provides for an administration of the forest reservations. The passage had been secured through the efforts of our fellow-member, the Hon. Thomas C. McRae, after accepting various compromises with the wishes of western representatives, which, while somewhat weakening the efficiency of the legislation, left the principle underlying it clear and undisguised.

The same bill essentially was passed in the Senate with various additional amendments, some desirable and some objectionable. Unfortunately, how-

ever, the form in which the amendments were made, namely, by striking out from the bill passed by the House all after the enacting clause and substituting the same reading with additions, made it appear like a new bill. Hence, in the unfortunate absence of the Chairman of the House Committee, who would have recognized the disguise, the Senate bill was sent back to the Public Lands Committee instead of going to conference, where the differences could have been adjusted and the enactment as a law made possible. Further action was precluded by the adjournment of Congress.

In the present Congress the same bills, slightly modified, have been introduced in each house, namely, S. 914, by Senator Teller, and H. R. 119, by Mr. McRae, securing the same number which it had during the last Congress.

It is hoped that the fact that these bills were passed in the two houses of the former Congress will naturally aid in securing their enactment as a law in the present. The consent of the Chairmen of the Public Lands Committee both of the Senate and the House to address the present meeting with reference to this legislation lends additional hope for this long-desired action. Meanwhile not much activity has been exercised in securing an extension of the forest reservations, since without proper administration, sought through the legislation referred to, such an extension did not appear especially desirable to the executive officers of the Department of the Interior. There are, however, a number of proposals for reservations prepared, to be brought forward when the administration feature has been provided. The discovery of valuable ore deposits on some of the reservations, and the consequent attempt to have them returned to the public lands for entry under the laws relating to mineral lands, makes the passage of a law regulating the use and occupancy of all reservations the more urgent.

While, then, in national matters a slow but sure advance has been made, several States have also progressed towards a more rational forest policy.

In Pennsylvania the splendid campaign of the Pennsylvania Forestry Association has resulted in the permanent establishment of the office of Forest Commissioner in connection with the Department of Agriculture, and the appointment of Professor Rothrock to the position has placed the movement upon a business basis as far the State is concerned. From New Jersey comes encouraging news regarding the growth of the State Forestry Association, which is accentuated by the establishment on a permanent basis of a journal, *The Forester*, appearing in bimonthly issues and promising in interest and general character.

The two States of Minnesota and Wisconsin, alarmed by the disastrous fires of the preceding year, were induced to pass forest-fire legislation proposed by the Forestry Associations of the respective States—one the oldest, the other the youngest of such associations. In Minnesota a special forest-fire warden, one of our charter members, is active in organizing the fire service, while in Wisconsin the function is unfortunately assigned to an officer already charged with other duties.

The Forest Commission of New Hampshire continues its laudable efforts to lay the basis for a permanent forest policy of the State. The Forest Commissioner of Maine, in addition to exercising the functions of a fire warden, issues a valuable report with studies of the mercantile side of forest growth in that

State. New York has increased the area of the Adirondack reserve by purchase of 75,000 acres.

For the Southern States an opportunity was had at the Cotton States and International Exposition to present not only the wealth and varied character of their forest resources, but also their condition, their reckless exploitation and the evil consequences of irrational deforestation, in a specially constructed forestry building, awakening the interest of her own people as well as of Northern visitors.

This exhibit, at which the American Forestry Association was properly represented, has been pronounced the most instructive and attractive of its kind ever seen in this country.

From the far West we hear of a growing appreciation of a needed change in the national forest policy, and although in Colorado and California no return to the official recognition of the abandoned State policy can be noted, the interest seems more generally diffused among the people. Utah has entered among the States having forestry associations, and from Montana indications come of the possibility of establishing one.

Two special meetings were held during the year: the one, a peripatetic meeting, in May, in connection with and at the invitation of the New Jersey Forestry Association, was designed to inspect the encroachment of the sand dunes, as a result of destruction of the protecting forest cover, which damage many of the seaside resorts of the lower coast, and also to give an impetus to the efforts of securing protection against the forest fires which ravage the plains of that State.

The other meeting was held at the invitation of citizens of Springfield, Mass., in connection with the meeting of the American Association for the Advancement of Science, advantage being taken of the presence of many scientific and influential men. At this meeting the Executive Committee was instructed to exert itself in securing the appointment of a commission to investigate and report on the conditions of the public timber lands, as a basis for further legislation. It was, however, decided by the Executive Committee that such a move would be prejudicial to the passage of the definite legislation now before Congress. The Secretary of the Interior, however, who again in his annual report refers in strong language to the need of a change in policy with regard to the public timber lands, has proposed to submit the question to the National Academy of Sciences, the legally constituted adviser of the Government on matters scientific, asking for an expression of opinion on the need and manner of such a change.

With all this quiet but persistent growth of the forestry movement, the Executive Committee feels that greater responsibility comes to the Association and its officers.

The work of the Secretary is growing more and more burdensome, and it may hardly be expected that it can be much longer carried on by a busy man in leisure hours. The need of a paid Secretary, urged again and again, becomes more apparent as we grow, but so far the Executive Committee has not felt justified in making an appropriation for this purpose. If, however, the membership, by the exertion of the present members, increases at the rate of the past year, it is expected that the current income of the Association will presently permit this most desirable departure.

It has also been the subject of consideration in the Executive Committee and at the Springfield meeting, whether in addition or instead of the volume of Annual Proceedings the publication of a regular monthly or bimonthly journal would not be a desirable—nay, necessary—policy, in order to keep the membership informed and interested in the progress of the movement.

At present the members are supplied with *Forest Leaves* under contract with the Pennsylvania Forestry Association, but as the movement grows in Pennsylvania that journal, by necessity, must give more and more space to local conditions and questions, losing thereby partially in interest to our members in other sections.

The appearance of *The Forester* in the neighboring State of New Jersey would make it appear that the field of journalism in forestry was by no means exhausted; but, while these journals may readily satisfy a local constituency, it is thought that a publication from the National Association should have a different character, and one more difficult to determine.

Garden and Forest, while an admirable journal, devotes a preponderant space to the first subject of its title, and cannot be expected to fill the object of the contemplated publication.

Diffidence in our ability to sustain without a paid editor a high-class journal, which would satisfy the needs both of intercourse with our membership and with the general public regarding the forestry movement and give instruction on technical matters that would be welcome to those who desire to apply forestry principles in practice, has deterred the committee from launching such an enterprise. It is, however, proposed to begin with the present year the issue of a series of bulletins, appearing more or less regularly, which shall test the practicability and desirability of a more regular publication.

Another matter of important internal organization has come before the committee, namely, the need of a plan for affiliation with the various State organizations.

From the inception of the National Forestry Congress and the organization of the American Forestry Association in 1882 it has been the policy of this Association to encourage the formation of State Forestry Associations; and the meetings of this Association have been held again and again with this object in view. While in this way local interest could be best secured, no definite plan of co-operation or relationship between the mother and daughter associations was developed. The absence of such a plan of affiliation has become more noticeable of late, and a committee has been appointed to formulate a plan, which it is proposed to bring before the present meeting.

The difficulties that originally surrounded the incorporation of the Association under the national law, namely, lack of sufficient members resident within the District of Columbia, has been happily overcome, and the articles of incorporation are now drawn up, and only await the formalities attendant on filing to make the Association a body corporate.

In submitting this report your Executive Committee feels that the Association and the public are to be congratulated upon the progress within the year, and the rich promise of the immediate future. Increased efforts are demanded on our part with the growth of the forestry movement; the membership should be doubled within the next year, a watchful interest should be sustained in

matters relating to State and national legislation, and above all the Association should further in every possible way all efforts to disseminate information of what constitutes rational forestry.

For the Executive Committee,

B. E. Fernow,
Chairman.

The report was accepted and made the basis of a discussion of the various subjects embodied in it. Prominent among these was that of effecting an affiliation of the Association with the State associations. A subcommittee of the Executive Committee to which this subject had been assigned for consideration had made a report, which the Executive Committee brought to the consideration of the Association. This embodied an amendment to the constitution as necessary in order to carry out the proposed plan of affiliation. After considerable discussion of the plan, it was referred to the Committee on Resolutions.

The subject of issuing a monthly or less frequent publication was then considered. The discussion resulted in showing a general opinion that an endeavor should be made to effect the consolidation of existing publications before undertaking the issue of another of similar character, and the subject was referred to the Committee on Resolutions.

On motion, it was voted that a Committee on Resolutions be appointed, to consist of not less than five members, and a Committee on Nominations, not to exceed three. Messrs. French, Smock, Moses, Binney, Ledyard, and Keffer were appointed as the Committee on Resolutions, and Messrs. Bowers, McLanahan, and Newell the Committee on Nominations.

Mr. Egleston in a brief address declined a re-election as Recording Secretary.

Afternoon Session.

The Committee on Resolutions reported the following resolutions:

Resolved, That the subject of the publication of a forestry journal be referred to the Executive Committee with full powers. The Executive Committee, however, is requested, before coming to any final decision, to correspond with the managers of *Garden and Forest*, *Forest Leaves*, *The Forester*, of New Jersey, and other papers published in the interest of forestry, to see if any measures can be adopted for the publication of a forestry paper representing the interests of all concerned.

Resolved, That the Executive Committee is requested to send circulars to all the Vice-Presidents and prominent members of the American Forestry Associa-

tion in each State and Territory where there is no local forestry organization, asking that a meeting be called annually of all the members resident in such respective State or Territory for the purpose of forming a section or branch of the American Forestry Association, to promote closer relationship with the National Association by advocating such measures as are set forth in its constitution or may be adopted at any time by vote, and also to increase the membership of our society.

The foregoing resolutions were discussed and adopted.

The committee also reported an amendment to the constitution, Article 3, which, after discussion and amendment, was adopted as follows:

"The members of any local forestry association which shall vote to affiliate itself with the American Forestry Association, under such rules as the Executive Committee may adopt, may become, by virtue of their membership in the local association, associate members of the American Forestry Association, and be entitled to all of the privileges of regular members, except the right to vote and hold office in the American Forestry Association."

The following resolutions were reported by the committee and adopted:

Resolved, That we recognize in House Bill No. 119, introduced in the present Congress, the principles of genuine forestry for which we have long contended, and we urge upon Congress the speedy passage of a bill to accomplish the objects contemplated therein.

Resolved, That we note with satisfaction the enactment of laws in the States of Minnesota and Wisconsin for the prevention of forest fires, and we express our hope that similar legislation, adapted especially to local needs, may soon be enacted in other States where the interests of the forest demand it.

The Committee on Nominations reported a list of officers to be appointed for the ensuing year. Their nomination was approved and officers were elected, as shown on page 3.

The following resolution was offered by the Committee on Resolutions:

Resolved, That the thanks of this Association are hereby extended to Dr. N. H. Egleston for his long and faithful service as Recording Secretary of the Association.

The resolution was adopted.

Mr. Birkinbine offered the following, which was adopted:

Resolved, That the American Forestry Association desires to express its appreciation of the excellent display of forest interests at the Atlanta Exposition by the U. S. Department of Agriculture.

Several persons were proposed for election as members of the Association. Their nomination was referred to the Executive Committee for action.

The Auditing Committee reported that they had examined the accounts of the Treasurer and found them to be correct.

The subject of special meetings of the Association, in connection with an invitation from Portland, Maine, was considered, and, with the annual meeting, was referred to the Executive Committee for decision.

The Association adjourned subject to call of the Executive Committee.

N. H. Egleston,
Secretary.

In the evening a joint meeting was held with the National Geographic Society, at Metzerott Hall. Hon. J. Sterling Morton presided and made a brief address, and then introduced in order the speakers of the evening: Hon. Fred. T. Dubois, Chairman of the Senate Committee on Public Lands, Hon. John F. Lacey, Chairman of the Committee on Public Lands of the House of Representatives, Hon. Thomas C. McRae, and Mr. William E. Smythe, of Chicago, Ill., President of the National Colonial Clubs.

REMARKS OF

Hon. J. STERLING MORTON,

Secretary of Agriculture and President of American Forestry Association.

[At the Joint Meeting of American Forestry Association and National Geographic Society, January 24, 1896.]

During the 20 years from 1875 to 1894 American farmers supplied nearly twelve billion dollars in value for foreign markets, or more than 75 per cent. of all the exports of the United States—the result of labor and skill applied to the cultivation of the soil. During the same 20 years American axemen cut down enough trees to make lumber and timber for export of a value approximating 500 million dollars, or 25 million dollars per year—the result of labor and skill applied to the despoliation of our rich inheritance in forest wealth without thought of reproduction. This export has increased in later years, reaching a maximum in 1890 with near 29½ million dollars, and averaging more than 28 million dollars since.

These figures are mere indices of the vast areas of land which have been culled or denuded simply for the purpose of export. It

is no exaggeration to say that, since such materials must be of a high grade of quality, the 500 million dollars paid to the exporters of forest products in these 20 years represent the spoliation of woodland equal to as much as one-fifth of all remaining forest growth in the United States; while home consumption, which is estimated to equal in value each year this large export figure for the 20 years referred to, must needs hasten this process of exhausting our timber wealth at a still more alarming rate.

It is needful, therefore, that the American Forestry Association reinforce itself with zeal and intelligent members in behalf of forest conservation and also of reforestation in some sections of the Union. Loss of soil by erosion and consequent sterility are visible in each one of the older States as a result of inconsiderate devastation of the forest cover on the slopes. In Ohio there are reported to be more than a million of acres of land now unproductive and unused, which have been defertilized in this manner. While no estimates are at hand to enable me to give a grand total of the lands which have been destroyed and rendered infertile throughout the United States, it is well known that the evil is wide-spread and the area must be enormous. It is time that as a nation we do something that will arrest this loss of our very bases of existence.

Permit me to quote from Irving, as a conclusion to these somewhat arid statements, that—

"There is something noble, simple, and pure in a taste for the cultivation of forest trees. It argues, I think, a sweet and generous nature to have this strong relish for the beauties of vegetation, and this friendship for the hardy and glorious sons of the forest. He who plants an oak looks forward to future generations and plans for posterity. Nothing can be less selfish than this."

And from another citizen of this Republic, who said with great vigor of truth:

"Keeping up a fit proportion of forests to arable land is the prime condition of human health. If trees go, men must decay. Whosoever works for the forests works for the happiness and permanence of our civilization. Now is the time to work, if we are to be blessed and not cursed by the people of the twentieth and twenty-first centuries. The nation that neglects its forests is surely destined to ruin."

THE NEED OF A FOREST POLICY FOR THE WESTERN STATES.

By Fred. T. Dubois, U. S. Senate.

As Chairman of the Senate Committee on Public Lands I am necessarily much interested in all questions which relate to the policy of their treatment,—their forest cover included.

In addition I represent a State in which the forest stands in intimate relation to all the leading occupations of the people, supplying timber for her mines, affording a reservoir for her irrigation systems, and thus becoming a factor in her future agriculture.

It affords me, therefore, great pleasure to meet with you this evening and to participate in your discussions of a problem which affects directly the varied interests of the West, and of my State in particular, and is at the same time one of the most important and the most difficult. I cannot hope to solve the question of an adequate forest policy for our Government, nor do I have very definite ideas as to what is best to be done, but I can at least express my sympathy with the objects of your Association, and my earnest hope that some measure will soon be adopted by Congress by which the timber lands which yet remain in the public domain may be protected and managed rationally, for the benefit of the present as well as the future of the States in which they are situated.

In the earlier years of our country's history the public lands were disposed of with reckless prodigality. The country was vast, the inhabitants few, and the first need of the new nation was that its domain should be peopled and be made productive.

Almost two hundred years elapsed before the presence of the vast treeless plains was known. From the first the American pioneer on the Atlantic coast had to clear away the forest in order to make a home. And by reason of this necessity we seem to have become imbued with the spirit of forest destruction. We have watched the disappearance of the magnificent white pine forests of New England without regret, and almost without comment. It has only been in the last decade that there has been anything like a general awakening of public sentiment on the forestry question. The whole East is a great forest, and in spite of farmer, and logger, and the fire fiend, the country east of the plains is yet rich in forest wealth.

In the West we have known from the first that our timber sup-

plies, outside the coast region, were limited to the mountains. Not a Western State or Territory but has vast stretches of dry plains which only need water to make them the most productive fields in the world. Unlike the Eastern country, where the whole land is a potential forest, there are hundreds of miles in our great Western country where no tree casts a refreshing shade, where rivers hide their waters beneath burning sands in the dry midsummers, where without man's aid desolation reigns.

In the earlier settlement of the mountain States the farmer confined his operations to the mountain valley, where each man could turn the water from the stream onto his adjacent fields. With the rapid development of the country and the need of more extensive farming operations, it was discovered that the great plains, lying miles away from the snow-clad heights, needed only water to make them as productive as the mountain valleys; and with the experience that the forest cover of the mountains has, as you teach, a close relation to waterflow, I have no doubt the interest in forest protection will grow accordingly.

At first the Western settler, like his ancestors of Eastern pioneer days, found the forest cover an impediment. It was in his way in prospecting, in mining, in farming, and he used the quickest means of getting rid of it—the fire. The railroads that crossed the mountains cleaned their right of way by fire and permitted it to spread beyond control, taking no thought of the tremendous damage done both within and beyond their limits. The mountains were everywhere forest-clad, and the few inhabitants considered them as inexhaustible, as were the pineries of Maine and Michigan looked upon by the loggers of earlier days; and this feeling is still abroad.

In the mountains of the West we have yet to create a public sentiment favorable to the protection of the forests for the sake of the future. The efforts of the Government to protect the forests of the public domain have thus far been futile, mainly for the absence of such sentiment. Government agents have found it well nigh impossible to convict men for the violation of the timber laws because the whole sentiment of the people was opposed to the laws, believing rightly, I think, that they worked a hardship on the individual settler, while not protecting the forests against corporations which sought gain only.

In the East—where the needs of a great population, coupled with wasteful methods of logging and the action of fire, have reduced the productive capacity of the forests very materially, destroying,

indeed, forest industries in many localities—public attention has been more readily directed to the necessity of forest conservation, and considerations of the future appear more natural. With us in the West the present demands all thought, all energy; with a limited population the timber supply seems still unlimited, and the relationship of forest cover to other conditions has hardly yet dawned on us.

It may be that the increased perspective which distance gives has enabled the membership of this Association to gauge relative values better than those of us who consider a tree only as a possible mining prop, and so look upon the *contents* of our mountains as of infinitely greater value than the trees that cover them.

You would teach us a better appreciation of relative values, and you would impress deeply on the Western mind a lesson that it is slow to learn—namely, that there is an interdependence between the elements that constitute the wealth of the West; and at the base of them all, supporting them, and making possible their highest development, demanding the best thought of their people for protection and care, stand the mountain forests.

My own State of Idaho is, to a great degree, typical of the mountain States as regards the importance of its forest areas, as well as regards the attitude of the people toward theories of forest protection. Throughout its entire area Idaho is traversed with mountains which group themselves variously into well-defined ranges, such as separate the State from Montana, or into great irregular circles, such as mark the confines of the Cœur d'Alene, or into tangled masses of short ranges, which seem quite without order, such as mark the central portion of the map of the State.

Separating these great mountain regions is the Snake river with its tributaries. In the south this river runs through a vast treeless lava plain, which traverses the State from the east and extends along the western border, embracing 30,000 square miles in its extent, a wide plain with its mountain borders remote from the great river, which has its sources in the forests of northwestern Wyoming.

The central mountains of Idaho, while they support a considerable forest cover, are poor in this regard when compared with the northern part of the State, where the forest wealth is developed second only to that of the Pacific States in economic value. Here we claim to have the only large amounts still standing of magnificent white pine—a different species, to be sure, from the Michigan

pine, that is just furnishing its last logs to the mill, yet a very good substitute. Here larch of dimensions and quality superior to the famed European article invites the miller, and giant cedar with trunks up to 12 feet in diameter cast a sombre gloom over the mossy floor of the deep valleys. Red firs, lifting their spires 200 feet above the mountain side, suggest the yet greater forest wealth of the Pacific Coast.

The Cœur d'Alene region in northern Idaho presents, perhaps best, the condition of much of our mountain forest and its fate. Here are working, within an area of but little more than 9,000 square miles, the opposing forces of man and nature. Hidden away in the mountains of the Cœur d'Alene is a wealth of mineral that is even yet only partially revealed. Covering their slopes and darkening their narrow valleys with their crowded crowns, pine and fir and hemlock and cedar clothe the region in perennial green.

From the first settlement, man has delved for the metal and considered the forest cover only as so much additional waste to be cleared away—as so much débris, compelling additional labor for its removal, and increasing by so much the cost of mining.

The soils of the Cœur d'Alene are nowhere of the highest fertility, and in only limited areas are there good farming lands. The soils are too porous, and do not retain moisture. With a heavy rainfall and freedom from frosts the forest growth had developed to a phenomenal degree, so that thirty-four years ago, when the first Government road was opened through this region, trees of the largest dimensions abounded everywhere.

When the road through the Cœur d'Alene was built, emigrants flocked westward along the trail to the valley of the Columbia. The deep stillness of the Cœur d'Alene valleys was depressing to the spirits of these wanderers, who longed for the sun they had so hated on the plains, and they set fire to the woods, if only to make a hole in the dense leaf canopy and let in the sunshine. Then the railroad, that vanguard of Western civilization, sought a route to Puget Sound. No aid so potent to man as fire to cleave a pathway through the impenetrable woods, and with only best intentions the torch was applied. True, the railroad owned but a certain amount of the land; but nobody owned the rest—it is so much easier to regard the Government as an entity here in Washington, where great buildings and thousands of workers give it a personality, than in the West, where the only evidences of its existence are the broad spreading, unoccupied acres!—nobody owned the land beyond the railway's claims,

and the fires which swept away thousands of the great trees burned deep into the soil and crept over hundreds of miles of this forested country, all but ruining its reproductive power. And after these came the miner. The precious metal was discovered in the Cœur d'Alene, and the busy prospector covered the hills, seeking everywhere for leads. The miner, like the pioneer and the railroad builder, burned away the forest cover; his only interest was in the few acres immediately about him, but he had no time to guard against the spread of the fire, and during the past fifteen years hundreds of miles of forest have been thus destroyed.*

An agent of the Department of Agriculture, in an interesting report, yet unpublished, on the forests of the Cœur d'Alene, says: "In 1884 I traversed miles upon miles of primeval forest in a journey through the Cœur d'Alene to Montana. In 1895, along the same route, there was not a single foot that the axe and fire had not run through, and the larger quantity had been uselessly and totally destroyed." Fifty per cent. of the accessible forest of this region has been absolutely destroyed, and 20 per cent. more has been culled, in the brief period since Mullin's road was built.

Unlike the fires in the East, which sweep through the forest with such rapidity as to be a menace to human life, the moist woods of the Cœur d'Alene burn very slowly, and life is not endangered. Thus the only great incentive to the protection of the forest—the element of personal danger—is reduced to a minimum. Fires have been known to smoulder in the humus-covered forest floor of this region for two months, beneath deep snows. Hence, once ignited, it becomes a matter of the greatest difficulty to quench them, and is usually only possible with the aid of the returning rainy season. Thus we have here an example which can be duplicated in every State of the West; before even a settlement is effected much of the natural wealth has been destroyed uselessly; snowslides, landslides, washing of the soil, excessive water stages in rivers, have been invited by the denudation of the mountain slopes, and the future made more difficult.

Now I appreciate that this treatment of our great forest resource is not rational. While at present we have more than we need, the rapidly developing West requires an increasing supply of timber for its varied interests, and it should be home grown—not, as has become necessary in many regions, brought from long distances.

The mines, much the largest users, should be saved the expense

* John B. Leiberg, of Hope, Idaho.

of long hauls. The cities and towns, which are springing up on every hand, should not be put to the disadvantage of freighting lumber from far distant sources. The varied manufacturing interests that are sure to follow the development of intensive farming, made possible by irrigation, the whole progress of our great mountain country is threatened by the wholesale destruction of our timber supply. For the Cœur d'Alene is only extraordinary in the wealth of its forests and their quick destruction. Throughout the Rocky Mountains the traveller has only to glance from the car windows to see great stretches of blackened tree trunks, or a worthless young growth of stunted poplar, where once magnificent forests of pine and spruce covered the land. The devastation is widespread; but the mere destruction of merchantable material, however intrinsically valuable, is as nothing to the greater danger which threatens our water supply.

The water supply of Idaho, taking the State as a whole, is large, the quantity in comparison with the total area of land to be irrigated being probably as great as that of any State of the arid region. Unfortunately, however, a great part of this water supply is not available for the development of the dry agricultural lands from the fact that it occurs in the great rivers draining the high mountains and narrow valleys of the northern part of the State or flows in the deep gorge cut by Snake River. Thus it happens that with the exception of the Snake River, near its head waters in the eastern part of the State, the streams of importance to agriculture are relatively small, and depend for their supply upon the lower, less rugged catchment areas. From these there is less runoff in proportion to the rainfall, and to reach the highest and best development possible for the rich farming lands commanded by its waters every drop should be saved and utilized.

The farmers who have lived in the country and watched the streams year by year believe that the runoff is closely connected with deforestation. They assert that on account of the destruction of the forests by fire, or injury to the character of the covering of the soil, the amount of water available is diminished either by being less in quantity or by coming in destructive floods. These floods, even under the best conditions, are wasteful, and reservoirs must be built in the future upon or near many of the streams to equalize the flow and to hold water until later in the growing season. The problem of protecting these from being filled by silt is one of the most important considerations, and one which in many localities can be solved

only by protecting the verdure upon the catchment basin, this in turn holding the soil from being washed away.

Even in the case of the head waters of the Snake River, deriving its supply from over 10,000 square miles of mountain area, it is questionable whether the wanton destruction of the forests will not seriously affect the flow of the stream. The farmers believe that it will, and as a rule, wherever their attention has been called to the subject, are in hearty accord with the objects of the Forestry Association.

In the State of Idaho there still remains vacant land to the extent of about 75,000 square miles, this being very nearly $\frac{9}{10}$ of the whole area of the State. Of the remaining portion, only about 5,700 square miles has been disposed of by the General Government, this being between 6 and 7 per cent. of the entire area of the State, and 3,500 square miles is reserved mainly for the use of the Indians. No forest reservations have been made, although the State contains vast stretches of heavily timbered land from which come the streams employed in irrigation. Considering the State as a whole, there is estimated to be in timber forests nearly 11 million acres, and in woodlands over 21 million acres, including under this head lands which do not furnish trees of size for dimension timber, but from which firewood and mining props can be cut. This leaves about 21 million acres as absolutely treeless, the greater part being broad undulating plains covered, during a part of the season at least, with a scanty vegetation furnishing forage for cattle. According to the last census the total area of improved land was a trifle over 600,000 square miles, most of this land depending for its value upon the water supply.

What shall be done?

It is one thing to recite the story of existing evils, and quite another to effect a remedy for them. Many considerations, difficult to understand at this distance, must enter into the determination of a practical working policy for the forests of our public domain. Were the forests which the United States owns situated in the East, surrounded by a dense population, motives of self-interest or of public welfare would render their protection easy. Located as they are, remote from centers of population, far distant from the markets of the world, usually difficult of access even from the mountain cities, without roads, with no definite boundaries, and surrounded by a population accustomed to a very liberal interpretation of private rights in public property, the difficulties in the way of

an efficient management are indeed great. It must not be forgotten, moreover, that a hundred years of neglect of the public domain has instilled in the minds of the people impressions that will be difficult to eradicate. Indeed, the very slow progress of the forestry movement here in the East is proof enough of this. Our people feel themselves in great measure justified in their treatment of the public timber lands. They are jealous of interference with their rights; they fear curtailment in their use of the resources at hand.

From the bills now pending before Congress, which I believe are partly or wholly endorsed by your Association, I see that the proposed administration provides not only for protection but for use of the timber. This is a correct principle.

If the United States Government proposes to retain these mountain forests, it should not only guard them properly, but aid instead of preventing their use, and make their rational exploitation possible.

Experience has shown the existing legislation to be vicious, to result in hardship to the settler and miner, without preserving the property. That a change is desirable has been urged for many years by various Secretaries of the Interior and by all people who have an interest in the matter.

What that change is to be permits, however, of wide differences of opinion.

Mr. Teller, in Senate bill 914, has proposed a plan which his familiarity with Western conditions would warrant me to accept in the main as practicable. It is, in the first place, intended to be applied to the forest reservations, but might with advantage be extended to all forest lands of the public domain.

Once inaugurated in a proper manner, when it is shown that the intention is to allow the use of the forest resources by the people of the States, with only such safeguards as will prevent their annihilation, I have no doubt that the sentiment of the people themselves will be with your endeavors.

One of the most hopeful aspects of your movement is that, as far as I have been able to observe, an increasing public interest is everywhere manifest, and with its growth Congressional action will not be wanting.

I close, then, with the hope that the problem of establishing a rational forest policy for the Government of the United States may have a speedy and wise solution.

THE DESTRUCTION AND REPAIR OF OUR NATURAL RESOURCES.

By John F. Lacey, M. C., Oskaloosa, Iowa.

The people of this continent do not sufficiently appreciate the immensity of the period that nature employed in building the New World and preparing it as a home for civilized man, nor how easily those advantages may be destroyed. When first Columbus set his foot upon these shores the vast forests and splendid prairies lay rich and inviting as the home of the coming race. The forest, which has done so much to prepare the earth for man's use, was encountered by the early settlers along the whole Atlantic shore. The necessity of clearing away this vast mass of vegetation led the pioneer to look upon the woods as the enemy of man. The axe was used unsparingly, and but few specimens of the original continental forests still remain.

Trees have their poetic as well as their practical side. While sensible to their beauty, we are now deeply concerned in their utility. All they have asked heretofore has been standing room. Give them but place, and they will patiently do their work. Their long arms have reached out for ages, and gathered from the air the elements of growth which they have added to the soil. As one poet has expressed it:

> "Cedars stretch their palms like holy men at prayer;"

and another speaks of them in winter,—

> "With their bare arms stretched in prayer for the snows."

They gather the sunshine year by year and store it away for future use. They fertilize the soil; they beautify it.

In a few old churchyards on the eastern shore of Maryland may be seen the remains of the splendid forest that once covered that region. The sight of these specimens makes us regret that larger areas of the ancient forest had not remained untouched. It was necessary to cut down a part of the forests, but man has swept them from the earth with the besom of destruction.

We are beginning to realize the wastefulness with which we have treated the gifts of nature. We found this continent a storehouse of energy and wealth. The climate was salubrious. The soil was

fertile. The forests spread on every hand. The rivers teemed with fish. The earth and air alike furnished supplies of game. Great coal deposits were found in almost every State. Coal oil and natural gas arose to the explorer from the bowels of the earth.

The prodigality of the sun is something amazing. When we think how few of its rays strike the earth or any of the planets in proportion to those that are constantly shed from its surface, we are led to wonder if they ever can be exhausted. Man is as prodigal of his natural possessions as the sun of its heat, light, and energy. We have not been content with improving upon nature, but have acted the spendthrift part in wasting her stores. The coal has been preserved in spite of man by vast strata of earth and stone, and there has been less wasteful extravagance in the use of this valuable mineral than, perhaps, any other of nature's gifts, and yet we are beginning to compute the time when the anthracite will only be found in the collections of museums. The coal oil has been wasted and wells have been opened and fields destroyed as though the supply was inexhaustible. Natural gas deposits have been tapped, and the wasting gas set on fire, lighting the country for miles around. These vast stores of nature's forces are being rapidly exhausted.

It has not been so very long ago that terrapin were so plentiful in Maryland that it was found necessary to enact a law preventing masters from feeding their slaves more than a given number of times each week upon that toothsome viand. Terrapin three times a day, three hundred and sixty-five days in a year, was found to be monotonous. No such law would be necessary now. In Connecticut the law forbade that an apprentice should be required to eat salmon more than twice a week for the same reason that the slave was protected against too much terrapin. Now the Connecticut salmon is a delicacy for the rich alone.

The extermination of the buffalo is too recent and too shameful to speak of excepting in the highest terms of indignation. Instead of taking these vast herds and, after giving them proper marks of identity, dividing them up and assuming proprietary rights over them, they have been slaughtered by the hundred thousand for the sheer pleasure of killing, until now a little handful of two or three hundred is all that is left of the millions which roamed the plains forty years ago; and this was called sport. It required nothing like the expert skill of the pig sticker who, covered with blood, presides over the scenes of carnage in one of our great slaughter-houses.

The same indiscriminate slaughter which has practically destroyed the salmon of Connecticut has been followed on the Columbia. Fish-wheels along the banks of the stream have been throwing out of the water enormous quantities of the most beautiful fish in the world, catching them at the very time when they were en route to the head waters of the stream to deposit their spawn. Legislation upon the part of Oregon and Washington has at last been reluctantly enacted, in time, I trust, to save these fish from extermination.

It is to the forests that we wish more particularly to direct our attention at this time. But the streams are the children of the forest, and the fish are the children of the streams. In the early days men often cut down trees for the wild fruits that grew upon them. The beautiful service-berry has been well nigh exterminated by this barbarous practice. This was a sin against nature. A few years ago I visited the great region of the Northern Pacific Coast, where to-day is perhaps the grandest forest now remaining on the face of the earth. It can no longer be described as

> "the continuous woods
> Where rolls the Oregon, and hears no sound
> Save his own dashings;"

for the hand of man is busily engaged in building up new States in that splendid country. Arriving upon the cars at The Dalles some one said to me to run out quick and I would see Mount Hood. I presumed Mount Hood was one of the permanent features of Oregon and I saw no reason to be excited or to hurry to see it, and took a little time to go to the point where the peak could be seen through the open street. I watched it for a moment and then the smoke and fog covered it. It was the first and last glimpse I ever had of Mount Hood. The whole country was covered with a pall of smoke. The same "improvement" was being perpetrated there as in early days on the Atlantic Coast. The promised destruction of the world by fire was progressing.

Splendid trees, five and six feet in diameter and hundreds of years of age, were being destroyed. Auger holes were bored in the tree near the ground, coal oil poured in the holes, a match applied, and the tree burned down. Other holes were bored in the body of the tree, and with the assistance of more coal oil a splendid tree was soon reduced to ashes. During the dry season these fires were permitted to escape and pass through the forests, covering and concealing the whole earth with a cloud of smoke, and rapidly working in this new field the same useless destruction which has followed in man's footstep in every part of the continent.

This sin on the Pacific Coast is only greater than that which was committed on the Atlantic shore because the forests are finer, and the mistakes made in the wanton destruction of the timber in the East ought to have been a warning in the West. They have an awful example to shun and not to follow.

In the hills of Virginia and West Virginia I remember in my boyhood days the little streams that were fed by springs, and favorite swimming holes could be found along them all. They were full of fish, and a source of delight to the young and old. After forty years' absence I revisited some of the same old streams. The trees had been cut from the hillsides. The springs had dried up. The old swimming holes were gravelly and sandy wastes,—as dry as Sahara, except where the channels were filled with muddy torrents for a few hours after a big rain.

In the older settled parts of the country the same condition of things occurred much longer ago.

I believe it was in 1842 that Doctor English described a similar condition, asking his old schoolmate to remember

> "The shaded nook by the running brook
> Where the children went to swim.
> Grass grows on the master's grave, Ben Bolt,
> And the spring of the brook is dry."

This wail touches the heart in every part of the settled portions of the country.

In Central and Southern Italy the Appennines are a striking illustration of the results of forest destruction. The ghastly seams into which the rains have washed lands that were once as fertile as any in the world have utterly destroyed much of that country for agricultural purposes. Surrounded as Italy is by the Mediterranean, the effects upon her climate have not perhaps been as bad as would follow in the interior part of the continent. But nature seems to have given up the struggle with man, and Hawthorne tells us that where man's hand has carved a stone in Italy its reclamation from nature is permanent, whilst in the north of Europe, or in the British isles, nature claims its own again, and covers the bricks and rocks with moss, lichens, or ivy.

Nothing is so beautiful as a running stream in a state of nature. It is a living thing, always sparkling, never growing old. The brook, where the forests still protect it from destruction in its course to the sea, is a symbol of eternity. To the poet it says,

> "Men may come, and men may go,
> But I go on forever."

But in the land of the Holy Writ, where the forests were but few, the brook was no such type of constancy. In Job, the brook is described as an emblem of deceit, frozen up in the winter and dried up in the summer. "My brethren have dealt deceitfully as a brook, and as a stream of brooks they pass away. * * * The paths of their way are turned aside; they come to nothing and perish."

The brook that Horace describes in his journey to Brundusium still flows in the same banks, and seems like a living thing, speaking of the poet of two thousand years ago.

The Hon. Timothy Brown, one of the leading lawyers of Iowa, has a discouraging theory which he supports with a considerable array of corroborating facts. He assures us that the magnetic pole is moving eastward at the rate of seven miles a year, and as it moves the area of drought in the Rocky Mountain region progresses at the same rate, and in due time Ohio will be as arid as Wyoming or Nevada.

We must not mistake mere weather for climate. We may have a scarcity of rain-fall, and that scarcity may become serious enough to lead us to apprehend a dangerous permanent change of climate, whilst it may be true that a similar condition of things has prevailed many times in the past in the same region, followed by a return of sufficient moisture.

But it seems to be the united opinion of all ages and in all countries that rain produces forests, and that forests produce rain; that great and injurious changes of climate almost certainly follow any sweeping and general destruction of the woods.

Trees set out along hedge rows will undoubtedly do much in ameliorating climatic conditions, but great masses of forest, where considerable regions are shaded and protected, are essential to the preservation of the climatic conditions that have brought so much prosperity to this country in the past.

In the Northwest the last few years of drought have prepared the people as a whole for the study of this question. The shrinking of the Great Lakes is already plainly noticeable, and active efforts for their preservation and restoration should be made without delay.

In Iowa some of the most beautiful of the little lakes have been drained and turned into fertile fields, whilst others have dwindled so as to be only a mere reminder of their former beauty. If the destruction of these bodies of water only entailed the loss of their beauty, a practical people might accept the change without any very great regret; but when the reclamation of a comparatively small

area of land to cultivation imperils the water supply of thousands of surrounding farms, it is high time to call a halt and demand a restoration of these sources of water supply. All land must at times lie fallow. The best rest that it can enjoy is when, covered with timber, it returns for a time to its natural condition, sheltered and fertilized by the woods once more. A reasonable portion of the country should at all times be thus given up to its native woods if we would preserve the fertility of the whole.

The practical question of to-day is how, as far as possible, to undo the mistakes of the past; how to prevent them in the future. Agitation and discussion are necessary to call the attention of the people to the importance of maintaining, and to at least partially restoring, the primitive forests of this country. The recent policy of withdrawing from settlement or sale large regions upon the head waters of streams, and creating forest reservations, is the greatest step in the right direction that has thus far been taken.

We must give up some part of our country to nature in order to keep the remainder for ourselves. The policy of most of the old States in regard to timber has been well summed up in six words: "To get rid of the timber."

With wood used for nearly every purpose from toothpicks and matches up to great grain elevators and ship masts, the proper and reasonable requirements for man's necessities and luxuries involve great and constant encroachment upon our forests. The old backlog of our forefathers has given place to the terra-cotta gas log of a new generation.

With barbed wire for fencing, and the decrease of wooden houses in the larger towns and cities, the overworked forests ought to have some rest. But the increase in population and the wear and tear upon old buildings make such calls for timber that, of necessity, a great drain upon the old forests continues.

Our fathers cut down beautiful black walnut trees for rails, and our own generation has pulled up the old stumps of the same tree for furniture making.

The peasants of France during the Revolution, it is said, would cut down two trees to make a pair of wooden shoes. Mark Twain, a few years ago while in Paris, promised to send as a wedding present to a friend the rarest and most expensive thing he could obtain in that city, and selected two small logs of fire-wood for that purpose, and, tying them together with red, white, and blue ribbon, laid them among the bric-a-brac at the wedding reception.

We ask ourselves what remedy we should adopt in America. This is more easily asked than answered. To call the attention of the people to the mistakes of the past before it is too late will lead to a conservation of groves and forests still in existence. The destruction from fires has already attracted much attention, and rigid laws to prevent them have been enacted in every State.

Groves and small wood-lots upon each farm will, in some measure repair the loss of the more extensive woods, but there must be considerable areas of country in which the forest must take control if we would preserve the climate, the springs, the streams, the soil, the birds, and the fishes. Even now the business of sinking wells for farm use to a depth of several hundred feet is being actively carried on in the West. The surface water is disappearing.

Private owners cannot perform the duty of forestry in America. We have no rich old families who from generation to generation have been able to set apart large tracts of land for the growth of trees. We have none of the beautiful old ruins that grace so many parts of the forest-planting kingdoms of the Old World. We have no ruins more picturesque than a defunct bank, a bankrupt insurance company, or a railway in the hands of a receiver. No baronial game preserves are set apart in America. Only the Government lives long enough to plant trees extensively. The private individual is too constantly reminded of the fleeting character of life to lay out a forest for succeeding generations. The Government alone can hold tracts either long enough or large enough to effect the great climatic purposes involved in the preservation of our forests. A great step in this direction was taken in the laws providing for timber reservations. These reservations should be kept for use and growth. A thorough system of cutting of this timber ought to be provided for at some time in the future when the wants of the people require that the ripened or dead trees should be utilized. But this should be done with such system as to preserve them as a whole.

The people should be taught the value of these reservations by thorough education upon the subject. Arbor Day celebration and the planting of fruit and timber trees will lead a new generation to realize that the forest is not the enemy of man, but his fast friend —a friend without whom nations cannot expect to prosper.

NATIONAL FORESTRY LEGISLATION.

By Hon. Thomas C. McRae, M. C., Vice-President for Arkansas.

Speaking without notes, Mr. McRae recalled his own attitude towards the forestry movement when the subject was first brought to his attention. His own State of Arkansas was so rich in forest wealth that the citizens did not appreciate its value, but looked upon the forest as a thing to be got rid of. No one buys wood for such uses as fencing, or lumber for a barn or house; his neighbor is glad to let him have all he wants, provided he will clear the brush as he cuts the trees needed for lumber. It is only when the denizen of the Arkansas forest is lured away from home to the treeless plains that he learns to appreciate his trees. Mr. McRae was never out of sight of trees until he had passed his thirty-fifth year, and he recalled the joy of some of his old-time neighbors, who, after a vain attempt to make a new home in the prairies of Texas, returned to Arkansas and could scarcely refrain from hugging the old pines that were their childhood's companions.

With such an environment it is not strange that the subject of forest protection should not appear an important one. When the first committee of this Association appeared before the Public Lands Committee, he took but little interest in their propositions. He regarded them as sentimentalists with somewhat visionary notions. But as the hearing progressed he was impressed with the fact that they were men of strong common sense, having a mission of great practical importance to the particular regions affected by the proposed legislation, and one of general interest to the country at large.

When Mr. Fernow told him that he had just exerted himself to get $3,000,000 of English capital into the State of Arkansas for the purpose of developing the oak forests on the agricultural bottom lands of that State, he began to realize that the object of the Association was not to prevent the use of the timber but to have it used rationally, to have it cut judiciously, nay, even to have it cleared away when the soil could be better used for agricultural purposes. He also realized that what was desirable and proper to be done in his State might not be desirable in other parts of the Union, and that the conditions of the regions in which the public timber domain is situated were different, as Senator Dubois had shown, from those of his own State.

He became a convert, and, as is apt to be the case with converts who

enter the lists for their adopted cause, is now an enthusiastic advocate of forest protection, and a member of the Association.

He saw, however, at once, that the original bill which he was asked to introduce in Congress was too elaborate a measure, providing as it did for a full administration scheme: and although he was persuaded that the scheme was a rational one, carefully worked out, he knew that it would be impossible to have it enacted.

The majority of Congress, just as the majority of the people, were not yet educated up to the point of appreciating fully the necessity and the importance of such an administration as the one proposed. He therefore advised to go slowly and try to secure by degrees the end sought, suggesting that the bill be cut down to the shortest possible expression of the idea involved, namely, the idea of protecting from spoliation. Even this much could not be secured in the 52d Congress.

Yet it was found that the forest reservations which Presidents Harrison and Cleveland had created under the new policy of the law of March 3, 1891,—over 17,000,000 acres, in the Western mountains—were worse off than if not reserved, for there was no legislation affording them any protection; they were simply lands withdrawn from sale and from use, interfering with mining and other industries which, under proper regulations, might be carried on without injury to the forest itself. This absolute withdrawal from use threatened to injure or overthrow the entire reservation policy, for the Western people found themselves cut off from the rightful use of the resources surrounding them. Meanwhile timber thieves, sheepherders, incendiaries continued their vocations unmolested. Hence the passage of a bill to secure a proper administration of these reservations became urgent.

Again, this bill (H. R. 119, 53d Congress) was made as brief and simple as possible, embracing only the salient points of the original comprehensive measure presented by the Association.

It left the detail of administration mainly to be provided by the Secretary of the Interior, giving him the right to determine the conditions under which mining and lumbering should be carried on and any other occupancy of the reservation might be allowed, and to organize a protective service, in which also the army might be used.

After much consultation with members representing the Western States and adjusting provisions of the bill to satisfy their ideas, it became possible to pass the bill and send it to the Senate.

Unfortunately, although the bill was passed by the Senate sub-

stantially as it stood, with some amendments, the form in which it came back to the House made it appear like a new bill, and instead of being sent to a conference committee for the purpose of adjusting the differences, it was returned to the Committee on Public Lands for reconsideration. This action was taken in the unfortunate absence of Mr. McRae, who had he been present would have been able to point out the error in the conception that it was a new bill and could have secured the conference and possibly its enactment. As it was, there was no time left to bring the bill out of committee before the adjournment of Congress.

The main point of difference between the two bills passed by the House and by the Senate was the omission in the Senate bill of the provision that the army be utilized for the purpose of protecting the reservations against depredation.

He had now introduced substantially the same bill and had been fortunate in securing the same number for the bill that it had in the last Congress, namely, H. R. 119, which might be considered a good omen. It seemed to him that there should be no difficulty in securing its enactment as a law during the present Congress.

It was certainly a non-partisan measure, based on sound policy and rational consideration of the needs of this property of the nation as well as of the needs of the people living near to it.

These, he was happy to believe, had also become more and more persuaded that the General Government should take the protection of its forest property under its special care, provided this does not mean interference with its legitimate use.

The finding of valuable mineral deposits within the boundaries of some of the existing reservations, and the consequent clamor to have the reservations restituted to the public domain for entry, because under present conditions the development of their resources is stopped, made it especially urgent to pass this bill: unless by the piecemeal restitution of the lands themselves the policy of reservation itself, so happily inaugurated, be nullified and its benefits lost.

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